CBO

CENTRAL INTELLIGENCE AGENCY
Office of Legislative Counsel
Washington, D. C. 20505
Telephone: [redacted] STAT

20 April 1978

TO: Dr. Alice Rivlin
Congressional Budget Office
3425 House Annex #2

Dear Dr. Rivlin:

Enclosed are the materials which [redacted] mentioned he would send when he briefed you the other day. STAT
Please note especially the Politburo Chart and biography on [redacted] STAT
Also included is a street guide for Peking.

It was a pleasure to meet with you and Mr. Fitt. I hope you have a most enjoyable and profitable trip.

[redacted] STAT

Enclosures

FORM 6-68 1533 OBSOLETE PREVIOUS EDITIONS (40)

POLITBURO OF THE CHINESE COMMUNIST PARTY

STANDING COMMITTEE
(IN RANK ORDER)

HUA KUO-FENG*
Chairman, CCP-CC (1976);
Chairman, CCP CC Military Commission (1976);
Premier, State Council (1976)

YEH CHIEN-YING*
Vice Chairman, CCP-CC (1973);
Vice Chairman, CCP-CC Military Commission (1966);
Minister of National Defense (1975);
Vice Chairman, Chinese People's Political Consultative Conference

TENG HSIAO-P'ING***
Vice Chairman, CCP-CC;
Vice Premier, State Council;
Vice Chairman, CCP-CC Military Commission;
Chief of Staff, PLA

LI HSIEN-NIEN*
Vice Chairman, CCP-CC (1977);
Vice Premier, State Council (1954)

WANG TUNG-HSING*
Vice Chairman, CCP-CC (1977);
Director, CCP-CC General Office (1966)

* Member, Politburo, 10th CCP-CC
** Alternate Member, Politburo, 10th CCP-CC
*** Was in position from January 1975 until dismissed from all posts in April 1976.

FULL MEMBERS

CHANG T'ING-FA
Commander, Air Force (1977);
1st Secretary, CCP Committee, Air Force (1977)

CH'EN HSI-LIEN*
Member, Standing Committee, CCP CC Military Commission (1977);
Vice Premier, State Council (1973);
Commander, Peking MR (1974)

CH'EN YUNG-KUEI*
Vice Premier, State Council (1975);
Scientist (1955)

CHI TENG-K'UEI*
Vice Premier, State Council (1975);
1st Political Commissar, Peking MR (1974)

FANG I
Vice President, CAS (1977);
1st Deputy Head, CAS CCP Committee (1977)

HSÜ HSIANG-CH'IEN
Vice Chairman, CCP CC Military Commission (1966)

CHAO TZU-YANG
1st Secretary, Szechwan Province CCP Committee (1975);
Chairman, Szechwan PRC (1976);
1st Political Commissar, Chengtu MR (1976)

CH'EN MU-HUA
Minister of Economic Relations with Foreign Countries (1977)

HSÜ SHIH-YU*
Commander, Canton MR (1973);
1st Secretary, CCP Committee, Canton MR (1976)

KENG PIAO
Director, CCP-CC International Liaison Department (1973)

LI TE-SHENG*
Commander, Shen-yang MR (1973)

LIU PO-CH'ENG*
Vice Chairman, NPC (1959)

NI CHIH-FU**
2nd Secretary, Peking Municipal CCP Committee (1977);
Vice Chairman, Peking MRC (1977);
2nd Secretary, Shanghai Municipal CCP Committee (1976);
1st Vice Chairman, Shanghai MRC (1976)

NIEH JUNG-CHEN
Vice Chairman, CCP-CC Military Commission (1961)

SAI-FU-TING**
Vice Chairman, NPC (1975);
1st Secretary, Sinkiang Province CCP Committee (1973);
Chairman, Sinkiang PRC (1973);
1st Political Commissar, Sinkiang MR (1973)

P'ENG CH'UNG
3rd Secretary, Shanghai Municipal CCP Committee (1976);
2nd Vice Chairman, Shanghai MRC (1976);
2nd Political Commissar, Nanking MR (1976)

SU CHEN-HUA**
Deputy Commander, Navy (1972);
1st Secretary, Shanghai Municipal CCP Committee (1970);
Chairman, Shanghai MRC (1970);
1st Political Commissar, Navy (1977)

WEI KUO-CH'ING*
Vice Chairman, NPC (1975);
1st Secretary, Kwangtung Province CCP Committee (1975);
Chairman, Kwangtung PRC (1975);
1st Political Commissar, Canton MR (1973);
Director, PLA General Logistics Department (1973)

WU LAN-FU
Vice Chairman, NPC (1975);
Director, CCP-CC United Front Work Department (1977)

WU TE
Vice Chairman, NPC (1975);
1st Secretary, Peking Municipal CCP Committee (1972);
Chairman, Peking MRC (1972)

YÜ CH'IU-LI
Vice Premier, State Council (1975);
Minister in Charge, State Planning Commission (1972)

ALTERNATE MEMBERS

Abbreviations:
CAS — Chinese Academy of Sciences
CCP — Chinese Communist Party
CCP-CC — Chinese Communist Party Central Committee
MR — Military Region
MRC — Municipal Revolutionary Committee
NPC — National People's Congress
PLA — People's Liberation Army
PRC — Provincial Revolutionary Committee

CR 77-15211
December 1977

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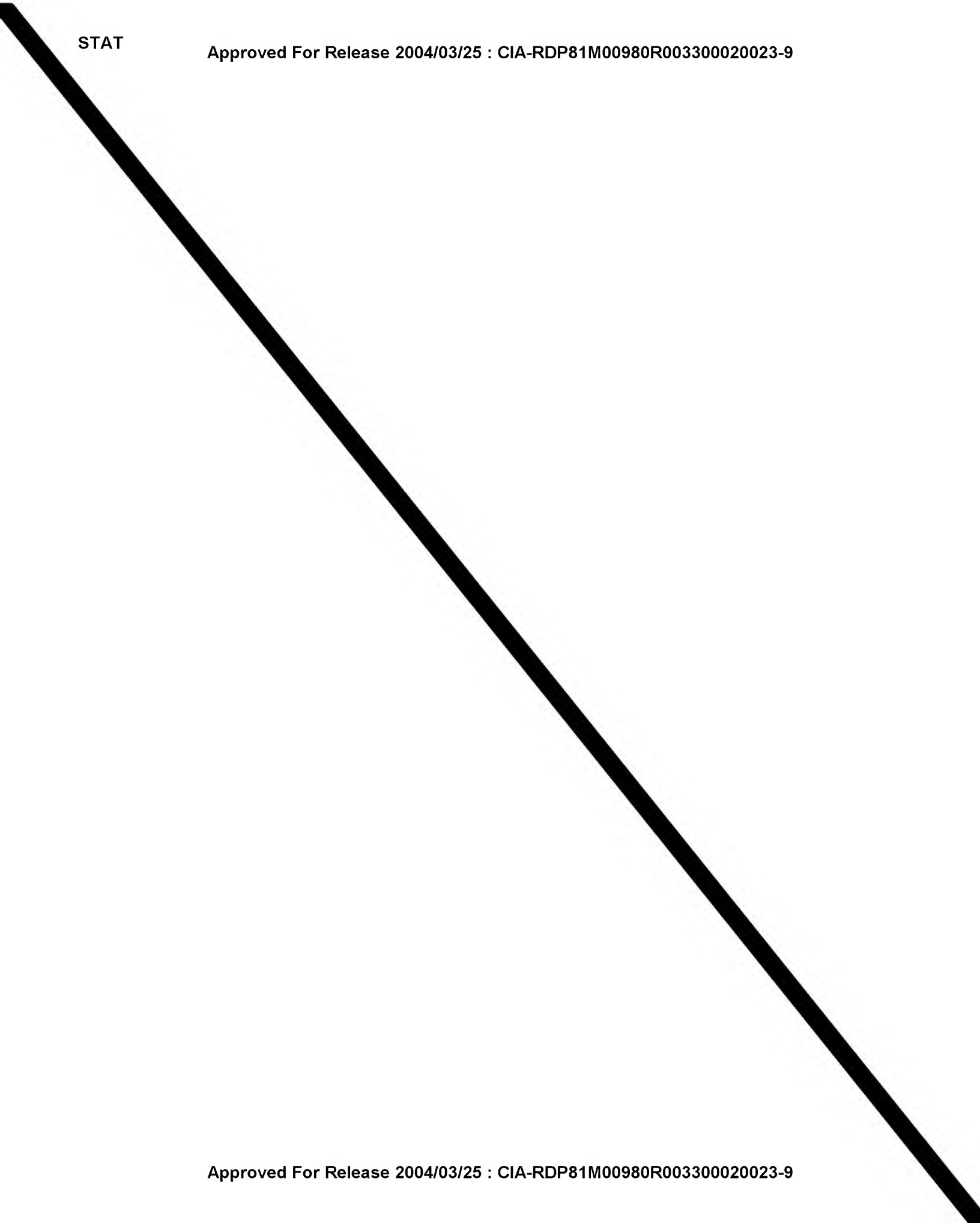

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S-CHI-78-52
Thursday
16 March 1978
VOL I No 52 Supp 1

DAILY REPORT

Supplement

PEOPLE'S REPUBLIC OF CHINA

MATERIAL ON FIFTH NATIONAL PEOPLE'S CONGRESS

(26 February-5 March 1978)

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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Director, General Political Department, PLA (1977)

WU-LAN-FU
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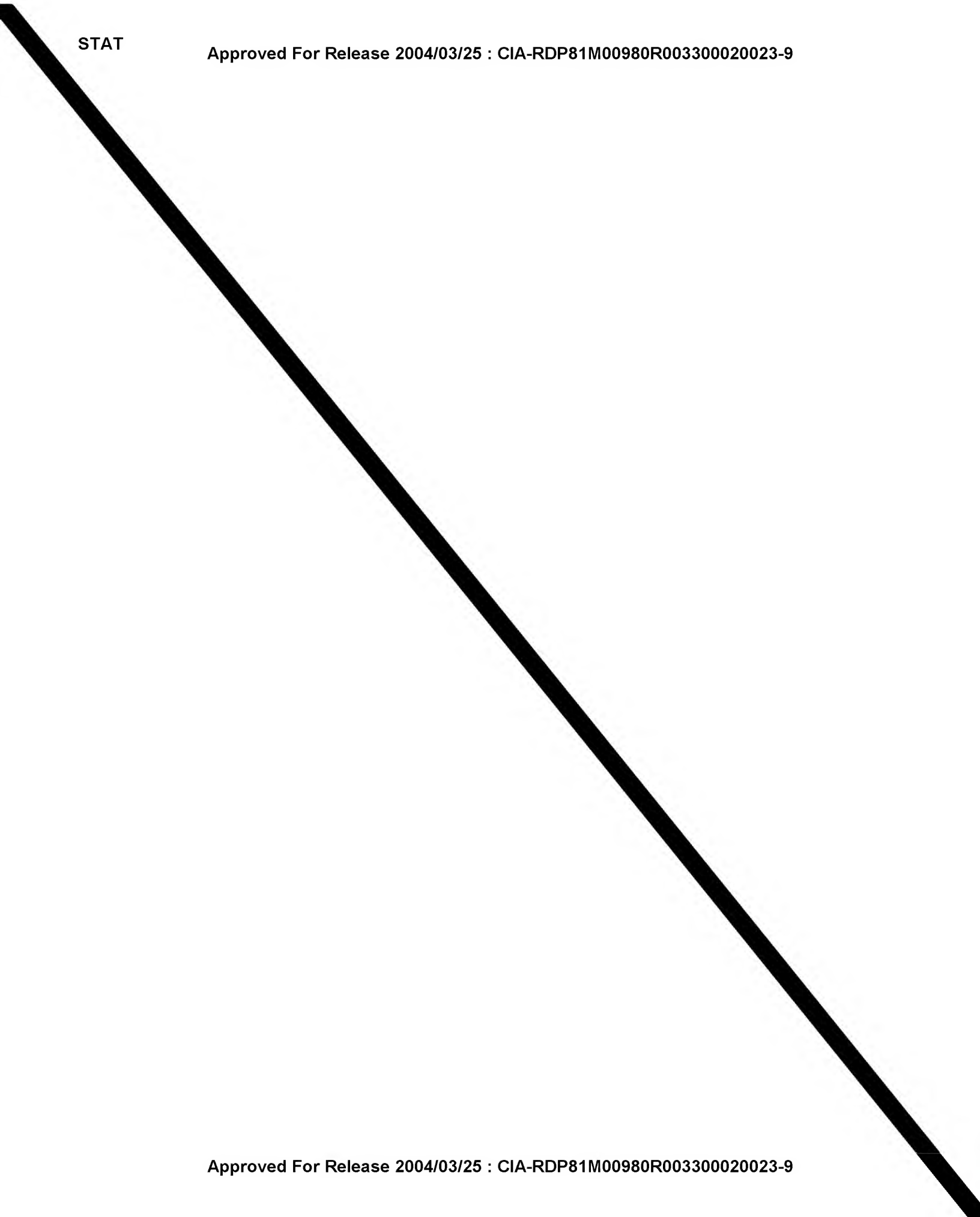

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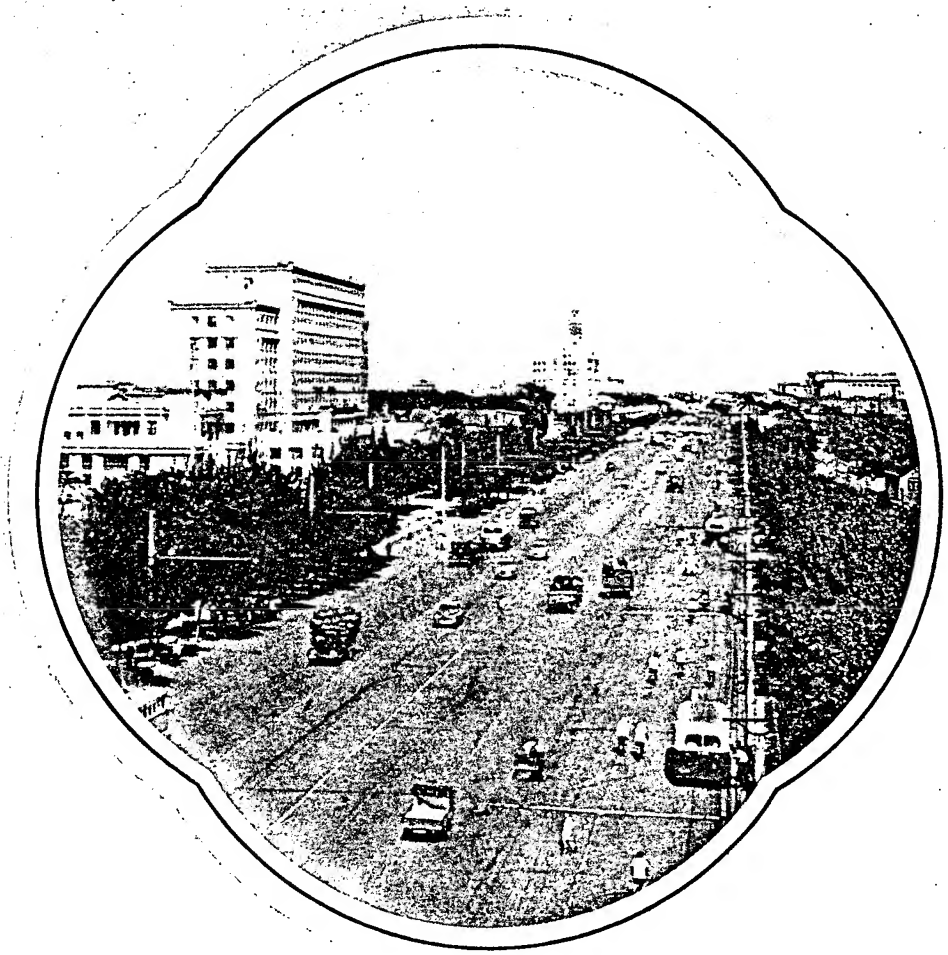
PEKING

Street Guide



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CONTINUED REPORTAGE OF NATIONAL SCIENCE CONFERENCE

Hua 24 March Speech

OW251208Y Peking NCNA in English 1200 GMT 25 Mar 78 OW

[Text] Peking, 25 Mar (HSINHUA)--Following is the full text of the speech made by Chairman Hua Kuo-feng at the National Science Conference yesterday which is entitled: "Raise the Scientific and Cultural Level of the Entire Chinese Nation":

Comrades:

This National Science Conference convened by the Central Committee of our party has been in session for seven days. At the opening session, Comrade Teng Hsiao-ping made a speech and Comrade Fang I delivered a report, both being very important and very good. Comrades attending the conference have discussed them in earnest and have all expressed hearty support. Everyone is greatly encouraged, in high spirits and free from anxiety. A national plan for the development of science and technology will be worked out and advanced collectives and individuals on the scientific and technical front will be commended at this conference. We are all fully confident that the conference will be a great success and have a tremendous and far-reaching impact on the development of our science and culture, the growth of our national economy and the building of a modern, powerful socialist state.

The Central Committee attaches great importance to this conference. Shortly after it smashed the anti-party "gang of four" of Wang Hung-wen, Chang Chun-chiao, Chiang Ching and Yao Wen-yuan, it convened the Second National Conference on Learning from Tachai in Agriculture and later the National Conference on Learning from Taching in Industry. At the same time the Central Committee was considering the convocation of a science conference after those on agriculture and industry. We officially announced this decision in the political report to the eleventh party congress. Then the Central Committee issued a circular on this to the whole party and the whole country. This is the first time in the history of our party and our People's Republic that the party Central Committee convened a conference of such a gigantic scale and broad representation in order to mobilize the whole party, the whole army and the people of all nationalities throughout the country to march toward the modernization of science and technology. It is an important measure adopted by our party to carry out the general task for the new period in our country's socialist revolution and socialist construction. Ours is a conference of tremendous immediate and historical significance.

Our country has basically eliminated the chaos created by the "gang of four" and is moving toward great order across the land. This has come about through a great, deep-going political revolution aimed at exposing and repudiating the "gang of four" during the last year or so, through the collective efforts of the party and the people on the political, economic, military and cultural fronts and through the several historic conferences for carrying forward the revolutionary tradition and forging ahead into the future--the eleventh party congress, the Fifth National People's Congress and the meeting of the Fifth National Committee of the Chinese People's Political Consultative Conference. Now, the line and the general task for the new period have been clearly formulated. The new constitution has been promulgated. The fundamental tasks and policies for various areas of work, the three-year and eight-year plans and a 23 year outline for the development of the national economy have been mapped out.

Although some detailed regulations, policies and plans still need to be worked out or improved, our major political guideline, namely, grasping the key link of class struggle to bring great order across the land, has in the main been set. What is required at present is to follow the line, policies and plans already laid down and to do solid work, keep our shoulder to the wheel, eliminate interference, surmount difficulties and fulfill the tasks before us step by step.

The general task laid down for the whole party and the whole people in the new period by the eleventh party congress and the Fifth National People's Congress has been written into the fundamental law of the state. The task is: Steadfastly continue the revolution under the dictatorship of the proletariat, carry on the three great revolutionary movements of class struggle, the struggle for production and scientific experiment, and transform China into a great, powerful socialist country with modern agriculture, industry, national defence and science and technology by the end of the century. It shows that we must follow the road of socialism unswervingly, grasp the three great revolutionary movements simultaneously and accomplish the splendid goal of the four modernizations. The world has witnessed different roads to modernization. There is capitalist or imperialist modernization and revisionist or social-imperialist modernization. What we want is socialist modernization, to be attained by steadfastly continuing the revolution under the dictatorship of the proletariat. Only this kind of modernization conforms to the common aspirations and the fundamental interests of the people of all our nationalities. Only this can bring genuine happiness to our people and cause people the world over to rejoice.

Socialism is the only way out for China. This was proved long ago by hard realities. In old semi-colonial, semi-feudal China, many persons with lofty ideals sought to develop science in China and make the country independent, strong and prosperous, but they all failed. Not until the Chinese Communist Party led the people of the whole country in winning complete victory in the new democratic revolution and in establishing the socialist system did China build a fairly modern industrial base, which provides the conditions for going on to the four modernizations. The "gang of four" were sworn enemies of socialism. They opposed the four modernizations in a criminal attempt to subvert the dictatorship of the proletariat and restore capitalism. If China were to follow the counter-revolutionary revisionist line of the "gang of four," the country could only degenerate into a colony or semi-colony of social-imperialism and imperialism. To achieve the four modernizations, independent, socialist China must adhere to Chairman Mao's thought and steadfastly continue the revolution under the dictatorship of the proletariat, which means sticking to the socialist road. For us, socialism and the four modernizations are inseparable from each other. Only by persevering in socialist revolution and continuing to transform that part of the superstructure and the relations of production not in correspondence with the growth of the productive forces can we constantly promote the four modernizations. Only by building a modern agriculture, industry, national defence and science and technology can we provide our socialist system with a powerful material base, steadily consolidate and develop the system, effectively defeat capitalism at home and be in a stronger position to resist aggression by social-imperialism and imperialism from abroad.

The general task for the new period calls for hard work in every field by the whole party, the whole army and the people of all our nationalities. Here I would like to go into one question in particular, namely, the necessity for greatly raising the scientific and cultural level of the entire Chinese nation.

The people of all nationalities in our country are industrious, brave and rich in creative talent. Under the guidance of Marxism-Leninism-Mao Tsetung Thought, our people have acquired many highly valuable capabilities in revolution and construction, performed great deeds and made tremendous progress in the course of their long and arduous struggle. Now, we must start a new and sustained study movement in order to extend our battle with nature, march toward the four modernizations and fulfill the general task history has assigned us for this new period. It is necessary to raise the study of Marxism-Leninism-Mao Tsetung Thought to a new level and, at the same time, strive to improve our general educational level, acquire modern scientific knowledge and master the work skills and methods of management which are indispensable to modern production. Raising the scientific and cultural level of the entire Chinese nation is a colossal task facing all our people. It is a task of strategic importance. Unless it is accomplished, our general task for the new period cannot be fulfilled.

The "gang of four" willfully undermined our socialist undertakings in science and culture, even babbling such nonsense as "the more knowledgeable, the more reactionary" and "labourers with no culture are preferable". They were a fascist cultural autocracy, sinister and rotten to the core. Their disruption dampened the enthusiasm of the scientific and cultural workers and the masses, so that our scientific and cultural undertakings are far from meeting the needs of our socialist revolution and construction, and the gap between science and technology in China and advanced world levels, which was narrowing at one time, widened again. This teaches us by negative example that raising the scientific and cultural level of the people is not a matter solely of imparting knowledge but is a great class struggle. We must carry through to the end the struggle to expose and criticize the "gang of four", eliminate the pernicious influence of their counter-revolutionary revisionist line, and clear the way for raising the scientific and cultural level of the entire Chinese nation.

It is in the vital interest of hundreds of millions of people to raise the scientific and cultural level of the entire Chinese nation. This can be achieved only by drawing in and relying on vast numbers of people, only by effectively organizing all the people on all fronts on a countryside scale. What we need is thousands upon thousands of skilled workers, skilled peasants and other skilled working people with socialist consciousness and the ability to master modern production techniques, enormous numbers of revolutionary intellectuals in all trades and professions and revolutionary cadres well versed in methods of management in the fields of modern economy and modern science and technology. We need a mighty force in industry, agriculture, science and technology, culture and national defence--people who are both Red and expert and who can take on a good fight. It won't do to have only a small number or a section of the people; hundreds of millions of people, the entire Chinese nation, must reach a much higher level.

Obviously, workers who are lacking in scientific and cultural knowledge and who fail to learn new production skills can hardly master modern industrial production processes. Rural people's commune members who are lacking in scientific and cultural knowledge, who do not know how to use power, machinery, chemical fertilizer, insecticides, etc. or have no knowledge of scientific farming, cannot cope with modern agriculture. PLA commanders and fighters who lack knowledge of modern military science and techniques cannot use modern arms and equipment and cannot succeed in organizing and directing modern war. On the other hand, if hundreds of millions of people grasp such knowledge and skill, they will become competent workers, peasants and armen, and moreover large numbers of technical specialists, innovators, inventors and scientists will emerge from among them.

We should therefore pay great attention to raising the scientific and cultural level of the whole nation. The modernization of science and technology should not be regarded as a matter only for scientific and technological organizations, nor should it be left to a few people in research institutions or universities. The most powerful base and inexhaustible source of strength for the modernization of science and technology in our country is the masses of the people in their hundreds of millions who, fired with enthusiasm, are determined to eliminate blind faith, emancipate their minds, cast off the sense of inferiority, call up the courage to break new ground, dare to think, speak and act, and exert themselves in study and work.

While we stress the need to rely upon the masses in their hundreds of millions, we must also make vigorous efforts to expand our contingent of professional scientists and technicians. We already have a Red and expert contingent that belongs to the working class. We should unite all revolutionary patriotic scientific and technical workers. Effective measures should be taken to train new forces and expand the professional contingent quickly. It is necessary to raise the level of the professionals and produce many scientists and technicians will keep raising their political consciousness, serve socialism wholeheartedly and integrate with the workers, peasants and soldiers while at the same time devoting themselves to their professional work, constantly improving their capabilities, combining personal effort with collective wisdom and striving to reach the summits of science and technology. We also hope that more and more people will have a better understanding of Marxism and firmly establish a proletarian, communist world outlook through studying Marxist theory and through class struggle and practical work. When that happens, we will be speaking a common language, in terms not only of patriotism and the socialist system but increasingly of the communist world outlook. The professional contingent is the vanguard and the core in raising the scientific and cultural level of the entire Chinese nation. It has the duty of taking the strongholds of science and technology and popularizing scientific and technological knowledge among the people.

Our people's armed forces have always had a system under which there is a "three-in-one" combination of the field armies, the regional forces and the militia, forming a great bastion in people's war. This should be applied also in scientific and technical fields: The hundreds of millions of people who are making a serious study of science and culture can be likened to a vast militia force on the fronts of science and technology, while the ranks of professionals are like the field armies and the regional forces. A general rise in the level of the masses will provide the base and conditions for growth for the professionals, who for their part, will guide the mass forces, crystallize their experience and wisdom and raise it to a higher level. This should be the system under which our country's scientific and technical forces operate; it is the road to victory through people's war on these fronts. Advancing our science and culture is a people's cause. By spreading scientific and cultural knowledge to raise the level of the entire nation, combining popularization with the raising of standards and integrating professional with mass forces, we will form a mighty army for science and culture and greatly speed our socialist modernization.

The education of young people is another very important aspect that merits special attention in connection with raising the scientific and cultural level of the entire Chinese nation. The young people are our successors in the proletarian revolutionary cause.

Starting from an early age, they should develop themselves physically, establish communist values and work style and show heroism in the interests of the collective. They should also cultivate, from an early age, the good habit of loving, studying and using science. Our party and our state must show particular concern for the healthy growth of the young people, make a good job of running primary and middle schools, universities and other types of schools at various levels, open all kinds of new channels for study, create the conditions for bringing up the young people as labourers who have both socialist consciousness and culture, and constantly train from among them scientific and technical personnel who are both politically sound and professionally competent. As talented young people appear in large numbers, our science and technology will flourish.

The task of raising the scientific and cultural level of the entire Chinese nation involves higher demands on our cadres, first of all on leading cadres at all levels. Chairman Mao taught us: "Conditions are changing all the time, and to adapt one's thinking to the new conditions, one must study. Even those who have a better grasp of Marxism and are comparatively firm in their proletarian stand have to go on studying, have to absorb what is new and study new problems." Leading organs and cadres at all levels should be good at adapting themselves to the requirements of our developing socialist modernization programme and must improve their methods of leadership and of work. Far from being weakened, political and ideological work should be strengthened in the new period of development in our socialist revolution and construction. Our party has fine traditions in political and ideological work; we should carry them forward and eliminate the pernicious influence of Lin Piao and the "gang of four". We should do our political and ideological work more carefully and precisely so that we constantly prevail over the ideological influence of the bourgeoisie and other exploiting classes, overcome the force of habit characteristic of the petty producer and make our political and ideological work an important guarantee for our socialist modernization. Politics is the commander, the soul in everything, and it won't do not to grasp political and ideological work; but neither will it do if we concern ourselves solely with politics and remain laymen, without any knowledge of technological and professional work. Chairman Mao taught us in all earnestness in 1958: "We must exert ourselves, we must study and carry through to the end this great technological revolution which history has assigned us. This question should be brought up for discussion among the cadres, and a cadre conference should be called to discuss what else we have in the way of capabilities. In the past we had the capabilities of waging war and carrying out land reform, but these capabilities alone are not enough now. We must acquire new ones and achieve a real understanding of professional work, of science and technology, or we cannot possibly exercise effective leadership." Following Chairman Mao's instructions, quite a number of our comrades have pitched in and obtained very good results in their study. On the other hand, there are some comrades who have failed to understand the profound significance of Chairman Mao's instructions. Moreover, when Lin Piao and the "gang of four" were engaged in disruption and sabotage, dishing up all sorts of fallacies and creating much confusion, they suppressed or attacked all those who paid attention to professional work or production, and it was out of the question for anyone seriously to tackle modern science or technology. Now many cadres have emancipated their minds and are diligently studying politics, economics, military affairs, professional work and technology, and the situation is most encouraging. Cadres at all levels in various professions and trades should do the same.

Our [illegible]s holding leading positions or doing political and administrative work on the scientific and technical front in particular should excel in study and, in the light of the special characteristics of scientific and technical work, should make a good job of political and ideological work, organization and management, and general service work. We should respect the labour of the intellectuals and show concern for them politically and for their work and life. We should draw close to them, understand them, get acquainted with them and forge close friendships. We should create favourable conditions for their work, give full scope to their initiative and bring our their creativity. Our comrades must do well in all these respects and ensure the comprehensive and correct implementation of the party's line, principles and policies so as to make new contributions to our socialist revolution and socialist construction.

In order to raise the scientific and cultural level of our nation, it is necessary to reiterate Chairman Mao's slogan on learning from foreign countries. Our principle is to learn the strong points of all nations and countries, to learn from them all that is truly good in politics, economics, military affairs, science, technology, literature and art. While upholding independence and self-reliance, we shall learn from other countries analytically and critically. We have always opposed the slavish comprador philosophy which holds that anything foreign is good, while nothing Chinese is any good, fancying that even the moon looks better over foreign lands and that China can only creep along in the wake of other countries. The "gang of four," for their own reasons, slandered our effort to learn from foreign countries as "slavish comprador philosophy". This was nothing but turning matters upside down and confusing right and wrong. Their purpose was to create counter-revolutionary public opinion so that they could usurp all party and state power and overthrow the central leading comrades who correctly followed Chairman Mao's principle of learning from foreign countries. If we indiscriminately refused to learn anything from foreign countries, China would remain backward forever. What socialist modernization could one speak of then? It is obvious that all the world's nations and countries have strong points and weak. They should learn from one another, drawing on the strong points of others to make up for their own weak points, so as to make steady progress. Can we refuse to study Marxism because its birthplace was in the West? Can we refuse to learn from the Great October Socialist Revolution because it took place in Russia? As for natural science and technology, we are behind advanced world levels. We admit our backwardness but we refuse to stay backward. We must catch up. We must, therefore, be good at absorbing whatever is valuable in things foreign, take them and turn them to our own use, and combine our learning from foreign countries with our own inventiveness so that we can catch up with and surpass advanced world levels as soon as possible. We should learn from foreign countries now, but should we do so when we overcome our backwardness and become advanced? Yes, because even then other countries will still have points worth learning, and we should still study them. What is wrong with that? After ten thousand years, we must still learn from others!

The first eight years are the key to accomplishing the four modernizations in 23 years, that is, by the year 2000. This is true also for raising the scientific and cultural level of the entire Chinese nation. We should draft plans for the next three and the next eight years and an outline for 23 years. From now on, we should encourage diligent efforts throughout society to study politics, raise the level of education and learn science and technology. Science means honest, solid knowledge and allows no hypocrisy and complacency.

Only with honesty, modesty and perseverance can one learn something. It is imperative that all our people develop the habit of studying hard. Conscientious study should be regarded as an honour, and refusal to study, as shameful. To be Red and expert should be regarded as an honour and refusal to make progress, as shameful. Hard work and contributing more to socialism is honourable, while easy living, refusing to work and living off socialism are shameful. Our entire country should be turned into a great school.

A great rise in the scientific and cultural level of the entire Chinese nation is a prerequisite for the four modernizations. We should look at its significance in a wider, deeper and farther perspective.

As the scientific and cultural level of the entire nation rises, we shall be able to use Marxism-Leninism-Mao Tsetung Thought still better to arm the cadres and the masses. In natural science, neither theory nor experimentation can be cut off from materialism and dialectics. We should urge all research workers in natural science to make conscious use of the Marxist world outlook to guide their work, and at the same time to spread materialism and dialectics far and wide among the masses through study of science and technology and participation in scientific experiments. Marxism has its source in the totality of human knowledge. Marx drew critically on all the knowledge provided by previous science to confirm his revolutionary conclusions. That is why raising the scientific and technical level is very important for studying Marxism well, and for a more profound comprehension and application of Marxism.

Raising the scientific and cultural level of the whole nation will help activate the masses to participate in managing the economic, cultural and educational undertakings as well as affairs of state. It will help extend socialist democracy in the political life of the country. Lenin said on this point: "We are perfectly aware of the effects of Russia's cultural underdevelopment, of what it is doing to Soviet power--which in principle has provided an immensely higher proletarian democracy, which has created a model of such democracy for the whole world--how this lack of culture is reducing the significance of Soviet power and revising bureaucracy. The Soviet apparatus is accessible to all the working people in word, but actually it is far from being accessible to all of them, as we all know. And not because the laws prevent it from being so, as was the case under the bourgeoisie; on the contrary, our laws assist in this respect. But in this matter laws alone are not enough. A vast amount of educational, organizational and cultural work is required." How profound are these words of Lenin's: The task we set today of raising the scientific and cultural level of the entire nation is closely related to a full development of socialist democracy.

In socialist society, we have to create the conditions for gradually narrowing the differences between town and country, between industry and agriculture, between manual and mental labour. From a long-term point of view, tremendously raising the scientific and cultural level of the entire nation means training hundreds of millions of working people who have both socialist consciousness and culture. They are the kind of working people who are politically conscious and are educated too, who can combine mental labour with manual labour, who are both Red and expert, and who have an all-round development, people who are both worker-intellectuals and intellectual-workers. This is the direction for our advance.

Comrades, on the eve of the founding of new China, our great leader Chairman Mao said: "We can learn what we did not know. We are not only good at destroying the old world, we are also good at building the new." What we are engaged in now is this great cause of building a new world.

Our country has a long history of thousands of years. Our nation once created a splendid science and culture. In the last few hundred years, owing to the corruption of the feudal system and aggression by colonialists and imperialists, science and culture fell behind in our country. Since the founding of the People's Republic of China, with its advanced socialist system and under the leadership of the Communist Party, there has been rapid progress of science and culture in our country. The economic and technical blockade enforced by imperialism failed to strangle us; the tearing up of contracts and withdrawal of specialists by Soviet revisionism failed to subdue us. We have developed our science and technology independently through our own efforts. Have we not made our own atom bombs, hydrogen bombs and man-made satellites? Have we not trained a contingent of outstanding scientific and technological workers who are both Red and expert?

Our people have deep respect for the many scientists who have made important contributions to science and technology in China, including the late Comrades Li Ssu-kuang and Chu Ko-chen. Facts past and present show that we Chinese have a head and two hands just like others and are no stupider than they. The key lies in the correct line. The development of science and technology in China has been delayed and frustrated owing to disruption and sabotage by the counterrevolutionary revisionist lines of Liu Shao-chi, Lin Piao and particularly the "gang of four". Now that the two bourgeois headquarters of Liu Shao-chi and Lin Piao have been crushed and the "gang of four" smashed, Chairman Mao's proletarian revolutionary line can be implemented correctly and in an all-round way. Of course, the class struggle is protracted and we will still have to remove obstacles from our path. But the greatest hindrance to our advance has now been cleared away. Several hundred million people are now marching ahead toward the modernization of science and technilogy and thousands of contingents of professional scientific and technological workers are sweeping forward without hindrance. We are fully determined to accomplish the important tasks called for on the scientific and cultural fronts in the new period and we are entirely confident of success. We will emerge as a nation with a high standard of culture.

Comrades: The comprehensive and correct implementation of Chairman Mao's revolutionary line can bring out fully the superiority of the socialist system, fire the enthusiasm of the masses of people to study new things and build a new world, unite and organize all possible forces throughout society and march forward under a unified plan to the common goal. This is the basic guarantee for the sure triumph of our cause. As we advance, we must study many things we do not know and overcome many difficulties. We can learn anything, provided we rely on the enthusiasm of the masses. No difficulty can stop us provided we rely on the united strength of the masses. Our slogan is: Study, study and once more study; unite, unite and once more unite. Let the whole party, the whole army and the people of all our nationalities hold high the great banner of Chairman Mao, rally closely round the party Central Committee, make concerted efforts to raise tremendously the scientific and cultural level of the entire Chinese nation and successfully fulfill the great historic mission of building a modern and powerful socialist state.

Press Features Speech

OW250809Y Peking NCNA in English 0745 GMT 24 Mar 78 OW

[Text] Peking, 25 Mar (HSINHUA)--The entire front pages of today's papers in Peking are taken up by the news on an important speech delivered by Chairman Hua Kuo-feng yesterday at the National Science Conference.

The PEOPLE'S DAILY carries the banner headline "Chairman Hua Issues a Great Call to the Whole Party, the Whole Army and People Throughout the Country Greatly To Raise Scientific and Cultural Levels of the Entire Chinese Nation". Chairman Mao's quotation can be found at the right hand corner of the first page: "The era in which the Chinese people were regarded as uncivilized is now ended. We shall emerge in the world as a nation with an advanced culture." Also on the front page is a close-up of Chairman Hua clapping acknowledgement to the delegates and a photograph of Chairman Hua, Vice-Chairman Yeh Chien-ying, Teng Hsiao-ping, Li Hsien-nien and Wang Tung-hsing on the platform.

The PEOPLE'S DAILY carries six more photographs on its fourth page under the headline "Ardent Expectation, Great Inspiration". Chairman Mao is shown visiting an exhibition of scientific research at the Chinese Academy of Sciences in 1958. Other photographs show Chairman Mao visiting the Tzuchinshan Observatory in Nanking in 1953, Premier Chou talking with the geologist Li Szu-kuang, Premier Chou inspecting the core extracted by the geology team at the Sanhsia water conservancy project in 1958, Chairman Chu Te of the National People's Congress visiting the exhibition of new scientific and technical achievements in 1958 and Chairman Chu Te trying a telephone to be popularized in the rural ares which was on display at the Nanking Industrial Development Exhibition in 1958.

Delegates Acclaim Hua Analysis

OW2612362 Peking NCNA in English 1218 GMT 24 Mar 78 OW

[Text] Peking, 26 Mar (HSINHUA)--Representatives to the National Science Conference today unanimously acclaimed Chairman Hua Kuo-feng's analysis of the inseparable relationship between socialism and China's modernization as "very important". While discussing Chairman Hua's March 24 speech at the conference, they pointed out that socialism is the only guarantee for achieving faster results in the endeavour to modernize China's agriculture, industry, national defence and science and technology.

"History has long proved that socialism is the only way out for China," said Feng Te-pei, vice-president of the Shanghai branch of the Chinese Academy of Sciences. Seventy-two-year-old Feng Te-pei, a famous neurophysiologist, recalled how he was appalled by China's poverty and backwardness during his youth and therefore went to study in the United States and Britain, imagining that science might help change the situation. Back to China, he found his hope dashed to pieces and the country and people poorer.

"Our science began taking off only in new China, after we, led by Chairman Mao, had overthrown imperialism, feudalism and bureaucrat-capitalism. Facts show that only under socialism can we fulfill our life-long aspirations," he said.

Mao I-sheng, vice-president of the All-China Scientific and Technological Association and one of China's leading specialists in bridge designing and engineering, said: "Socialism pools the efforts of our 800 million people under a unified plan. The strength it produces is inestimable."

Professor Su Pu-ching, the renowned mathematician, said that there were few students of mathematics in old China and, working separately, they met almost insurmountable difficulties.

"Thanks to the close cooperation betweeen the Academy of Sciences and colleges, we have trained large numbers of research workers since liberation and rapidly achieved a number of world-ranking results in this field." He said he believed China would overtake the advanced world levels in more aspects of the work in 5 to 8 years.

His view was shared by the young mathematicians Chen Ching-jun, Yang Lo and Chang Kuang-hou, who were trained in new China. They all stressed the importance of socialist revolution as a prerequisite to China's modernization, which in turn would provide socialism with a solid material foundation.

"It is socialism that has brought the initiative and ingenuity of the masses of workers and scientists and technicians into full play," said Ma Pin, party secretary of the Anshan Iron and Steel Company, China's leading steel centre. "Thanks to their joint efforts we have been able to reconstruct the company, a dying enterprise at the time of liberation, and expanded it to its present scale. We will make it grow faster in the coming years."

A regiment political commissar of the Liberation Army during the war years, Ma Pin has become a capable modern enterprise leader through hard study. "As a leading cadre, I will study harder in response to Chairman Hua's call to keep myself abreast with the development," he said.

Many scientists said they would strive to learn more Marxism, improve their research work and train more scientific and technological workers especially from among the youth, so as to help raise the scientific and cultural level of the entire Chinese nation.

Seventy-five-year-old Professor Pei Shih-chang, the noted biologist, now heads a 12-member team in studying cell reconstruction. Nine of the team members are young people. He said: "We hope our research in cell differentiation and reproduction would provide a foundation for cell's biological synthesis." He added: "Now that we have a correct line and correct principles and policies, we will certainly fulfill the plan for the modernization of our science and technology."

Speech Encourages Scientific Study

OW251824Y Peking NCNA in English 1753 GMT 25 Mar 78 OW

[Text] Peking, 25 Mar (HSINHUA)--Chairman Hua Kuo-feng's speech at the National Science Conference "will arouse people throughout the land to study science and culture and to develop them at high speed." So said Li Chang, vice-president of the Chinese Academy of Sciences, at one of many group meetings where National Science Conference delegates are discussing Chairman Hua's speech, "Raise the Scientific and Cultural Level of the Entire Chinese Nation".

Li Chang recalled: "We once mobilized the entire nation to defeat the Japanese aggressors, and later did it again for victory in the revolution against imperialism, feudalism and bureaucrat-capitalism. Today, again, we must mobilize the nation to modernize our science and technology."

Li Chang said the Chinese Academy of Sciences must launch a huge mass movement to promote scientific experimentation, in addition to studying and developing new theories and technologies and solving major scientific problems in the country's economic construction.

The prominent atomic physicist Chao Chung-yao said: "Our socialist system has provided us with the conditions for making full use of collective strength. The next two decades will be our best for the development of science." Chao Chung-yao is a well-known scientist and frequently receives letters from young people asking him to help solve their problems in study and research. He answers them all, giving them patient help. He said at the group discussion today: "At 76, I plan to go on working, helping post-graduate students and making the results of our research available to the people."

Many veteran scientists are feeling their responsibility for raising the nation's scientific and cultural level.

Seventy-eight-year-old Professor Yen Chi-tzu said: "In everything we do, we must keep 800 million people in mind." As his part in the nationwide effort, he pledged to help post-guarduate students, give lectures, compile books on rudiments of mathematics, physics and chemistry, and do work on journals of the Chinese Academy of Sciences.

Chang Wen-yu, director of the Geological Research Institute, promised to help locate more rich-iron and oil reserves and make more accurate earthquake predictions. He will also work on geology courses for China's middle schools.

Leading cadres among the delegates saw the need to raise their own level of science and culture in order to raise the national standards.

Vice-Minister of Education Kao I said: "I joined the revolution with a will back in 193[illegible] Chairman Hua's [illegible] has given me renewed enthusiasm. I am planning to make a study of proletarian pedagogy and natural science and learn how to run socialist schools."

When he came back to the hotel after Chairman Hua's speech yesterday evening, Kao I discussed with the delegate from Peking University ways to enroll more post-graduate students and improve the teaching of foreign languages. He said his ministry planned to call a national conference on educational work to map out programs for raising the young people's level of science and culture in the next three, eight and twenty-three years.

Yesterday afternoon when Chairman Hua said: "Our slogan is study, study and study again; unite, unite and unite again," the hall resounded with applause. Today, the delegates discussed this slogan with special enthusiasm.

Chia-na-pu-erh, deputy secretary of the party committee of the Sinkiang Uighur Autonomous Region, said: "Science in Sinkiang has developed literally from scratch. The question now is to push it forward at high speed. This calls for more effort in study. It is all the more necessary for us in Sinkiang, outpost of the struggle against revisionism, to unite to defend the border region and to develop it." He said that the people of various nationalities in Sinkiang will rally firmly around the party Central Committee headed by Chairman Hua and strive to fulfill their historical mission in the new period of socialist revolution and construction.

Chia-na-pu-erh said he intends to meet with Sinkiang cadres at the science conference to discuss ways and means of responding to Chairman Hua's speech.

Conference Delegates Inspired

OW252135Y Peking NCNA Domestic Service in Chinese 1710 GMT 25 Mar 78 OW

[Excerpts] Peking, 25 Mar--Our wise leader Chairman Hua's great call to "raise the scientific and cultural level of the entire Chinese nation" has profoundly educated and inspired delegates attending the National Science Conference.

Yesterday evening and today the delegates held group meetings to conscientiously study and enthusiastically discuss Chairman Hua's important speech. Many delegates were so excited they stayed awake all night discussing it. They unanimously hailed the speech as a declaration that China will become known in the world as a nation with a high cultural level. They also described it as a call to mobilize millions of people across the land to work toward the goal of building a modern science and culture and a document to guide us in persistently continuing the revolution under the dictatorship of the proletariat.

At the group meetings, many delegates hailed Chairman Hua's important speech as a reflection of the aspirations of Chinese Communists and the entire Chinese people.

Min En-tse, chief engineer of the General Research Branch of the Petrochemical Research Institute, said: Chairman Hua has instructed professional scientific researchers to assume responsibility for solving major scientific and technological problems. This is an honorable task.

Chia Cheng-jang and Kao Yu-liang, representatives of Tachai brigade, said: Chairman Hua's speech has further clarified the course of action for us. In the future, we must carry out large-scale agricultural scientific research projects, practice scientific farming, and make efforts to build a contingent of politically conscious and professionally competent agrotechnicians.

At the study and discussion meetings, delegates used Chairman Hua's important speech as a weapon to criticize the crimes of the "gang of four" in practicing fascist cultural autocracy, in promoting a policy of hoodwinking the people, and in hampering the development of science and culture.

Su Yu, secretary of the Liaoning Provincial CCP Committee, said: Chairman Hua explicitly dealt with matters of primary importance, such as the nature and task of the modernization of socialism, the relationship between politics and professional knowledge, between professionals and the masses, and between study and inventiveness. This speech is a sharp weapon for us to penetratingly expose and criticize the "gang of four."

Noted model cotton grower Wu Chi-chang excitedly said: A few years ago, I was tormented and persecuted by the "gang of four" who prohibited me from conducting scientific experiments in growing cotton. At that time I had to secretly use scientific methods to grow cotton. Today, with the backing of Chairman Hua and with Vice Chairman Teng as our "director of the Logistics Department," I have nothing to fear. Many delegates said: Chairman Hua called on us to "study, study and study again; unite, unite and unite again." This is a strong criticism of the "gang of four" who were guilty of perpetrating one trouble after another and making repeated efforts to split us. In response to Chairman Hua's call, we must play an exemplary role in study and achieving unity, and work hard to fulfill the great historic mission to make China a powerful and modern socialist country.

Group Discussions Continue

OW250007Y Peking NCNA Domestic Service in Chinese 1938 GMT 23 Mar 78 OW

[Text] Peking, 23 Mar--For the past 5 days National Science Conference delegates have been divided into groups to study and seriously and thoroughly discuss Vice Chairman Teng Hsiao-ping's important speech and Vice Premier Fang I's report. The delegates have unanimously declared: Vice Chairman Teng's speech has theoretically armed both the scientific-technological front throughout the country and the whole party; it has correctly and comprehensively elaborated Chairman Mao's thinking, line, principles and policies regarding the scientific-technological front, thus giving us great freedom of thought. This ideological liberation will certainly promote the further development of our country's scientific-technological front.

The group discussions have proceeded in a warm, lively atmosphere. The delegates have chatted freely, with complete peace of mind. They have vehemently criticized the crimes of the "gang of four" in undermining scientific-technological work and in persecuting intellectuals, thus voicing grievances they had accumulated in their hearts over the years. They have also noted: The burden is heavy, the road is long; yet time awaits no man. We must go all out, work hard and do our best to rapidly achieve the lofty goal of modernizing our nation's science and technology.

During the group discussions, party and state leaders Fang I, Su Chen-hua, Wu Te, Chen Yung-kuei, Li Ching-chuan [2621 0064 3123] and Wang Chen [3769 7201] have individually visited the delegates at their residences and have talked with them, thus greatly inspiring them. During these discussions, leading party cadres from all levels who are attending the conference have enthusiastically discussed the key issue pointed out by Vice Chairman Teng: That the party must do a good job in directing scientific-technological work. They have said: This issue demands that party committees at all levels cope with the general tasks in the new period of development and shift the emphasis of party work and work style accordingly.

Wu Nan-sheng, deputy secretary of the Kwangtung Provincial CCP Committee, said: This shift of emphasis will place new demands on leaders at all levels. We should launch an extensive study movement because many comrades don't clearly understand scientific experimentation or the four modernizations. How then can we begin our new Long March? Basically, we are "ignorant in science." We must admit that we don't have enough knowledge and don't study in a down-to-earth way. The Kwangtung Provincial CCP Committee and the Canton Municipal CCP Committee have decided that secretaries should take the lead and, together with government cadres above departmental level, attend regular sessions to hear reports by scientists on basic scientific and technical knowledge.

Liu Shu-kang, deputy secretary of the Hsiyang County CCP Committee, said: In order to direct scientific-technological work, party committees must better understand science and technology and realize that science and technology are part of the productive forces. In emphasizing scientific technological work, it is necessary to enhance our understanding of scientific and technical contingents, treat scientific and technical personnel correctly and show respect for their work, and shift the emphasis of the party's work accordingly. It is also necessary to further eliminate the pernicious influence of the "gang of four" and, while deepening the socialist revolution on the ideological-political front, make conscientious efforts to advance modernization and strengthen leadership over scientific-technological work.

Many delegations have also organized discussion meetings with leading party cadres. With Vice Chairman Teng's speech as the weapon, they have conducted serious analyses of themselves, taken initiative in discovering shortcomings and concentrated on improving leadership and scientific-technological work. This has greatly inspired the scientific and technical workers.

Many leading cadres have become excited and enlightened by Vice Chairman Teng's remark: "I am willing to serve as director of the Logistics Department." Yeh Chih-chiang, vice minister of the Metallurgical Industry, said: In order to rapidly develop our country's metallurgical industry and metallurgical science and technology, I want to become a qualified logistics officer, supporting scientific-technological work in the field of metallurgy.

Many old intellectuals who lived within the old society have expressed happiness over the removal of the false accusations and mental shackles imposed on them by Lin Piao and the "gang of four"; they have been in high spirits during the group discussions. They have been very enthusiastic and are determined to use their remaining years well; to the best of their ability, contribute the knowledge they have accumulated over the years to the socialist motherland; and pass on their experiences to the younger generation on the scientific-technological front.

Chao Chin-sheng, veteran professor of the Department of Water Conservancy of Tientsin University, enthusiastically declared: In the past, the "gang of four" segregated the masses of intellectuals from the working people. I, too, was overly cautious in work and speech. After hearing Vice Chairman Teng's speech, I have truly realized that I am also a master of the country.

Scientific and technical personnel who were raised after liberation have profoundly realized their heavy responsibilities. Tso Hou-tien, a technician of Hui nationality from Fukien Province, said: The 70- and 80-year-old scientists are still vigorously following Chairman Hua in continuing the Long March. We 40-year-old middle-aged [illegible] should assume even heavier responsibilities and work harder for ideological transformation and scientific research.

Scientific and technical personnel of both the older and younger generations are determined to constantly enhance their political consciousness and adhere to the stand of the proletariat while working hard to promote science.

Scientific and technical personnel who came from the frontline of industrial and agricultural production have used their personal experiences to explain the great role of science and technology in promoting production. They have pointed out: Without the development of science and technology, the means of production will not develop. Without gaining sufficient knowledge of science and technology, the workers cannot achieve higher productivity.

Delegates from the field of national defense research have pointed out: Modernization of science and technology is a prerequisite for realizing modernization of national defense. If science and technology lag behind, modernization of national defense will be hampered and we will assume a passive role in the face of enemy attacks.

Scientific and technical workers of Taiwan origin or of minority nationality who are working in eight provinces and municipalities were particularly excited upon hearing Vice Chairman Teng's speech and Comrade Fang I's report. Taiwanese scientific workers have pledged to go all out to advance their work and contribute to the rapid building of the motherland into a powerful and modern socialist country and to the sacred cause of Taiwan liberation.

The great goal of advancing toward our country's scientific-technological modernization, set forth by Vice Premier Fang I in his report, has greatly encouraged the nearly 6,000 delegates attending the conference. They have enthusiastically declared that they will dedicate all their wisdom and abilities to realizing this grand objective.

During the group discussions delegates have expressed their resolute support of various measures for developing scientific-technological work set forth by Vice Premier Fang I in his [illegible]

In discussing the consolidation of scientific research organizations, the delegates have said: Comrade Fang I pointed out in his report that "wind followers" and those who have bad political character, who "slip away" and who have committed serious mistakes and maintain bad attitudes should be removed from leading groups. This stand reflects everyone's true feelings. The delegates have also pointed out: Seeking and selecting talent from all sources, without conforming to a pattern, is a significant factor in realizing scientific-technological modernization; this practice must be firmly implemented.

The delegates have also enthusiastically discussed and made many valuable suggestions with regard to the issue of insuring that at least five-sixths of scientific researchers' work hours are spent on their professional work, on adherence to the policy of letting a hundred schools of thought contend and on other tasks.

27 March Session

OW271250Y Peking Domestic Service in Mandarin 1000 GMT 27 Mar 78 OW

[Text] The National Science Conference met again in plenary session this afternoon at the Great Hall of the People. Four delegates spoke at the session, which was presided over by Yu Chiu-li, member of the Political Bureau of the CCP Central Committee and vice premier of the State Council.

Present were party and state leaders, including Fang I, Su Chen-hua, Chang Ting-fa, Keng Piao, Ni Chih-fu, Wang Chen and Kang Shih-en as well as Lo Jui-ching, responsible person of the Military Commission of the CCP Central Committee.

Amid warm applause, Min Yu, vice chairman of the Taching Oilfield Revolutionary Committee and chief geologist, made a speech entitled "Persist in Carrying Out the Three Great Revolutionary Movements Simultaneously and Quickly Scale New Heights in Petroleum Science and Technology."

Li Fu-sheng, secretary of the Hunan Provincial CCP Committee, made a speech entitled "Chairman Hua Leads Us in Conducting Scientific Experiments on a Large Scale."

Chin Shan-pao, president of the Chinese Academy of Agricultural and Forestry Science, made a speech entitled "Strive To Turn Our Country into the World's Leader in Agricultural Output."

Chen Ching-jun, researcher of the Mathematics Institute under the Chinese Academy of Sciences, made a speech entitled "In Studying Science, There Are Difficulties Which Can Be Overcome Through Hard Work."

Today, delegates began giving speeches at the conference. At the same time, they will also hold group discussions on the outline of the 1978-85 draft plan for the national development of science and technology and continue to visit to various units.

Geologist Min Yu Speech

OW270856Y Peking NCNA in English 0841 GMT 27 Mar 78 OW

[Text] Peking, 27 Mar (HSINHUA)--Chief geological engineer of the Taching oilfield, China's pace-setter in industry, said here today that scientific research is a "most important factor" behind the rapid development of the oilfield.

Addressing the National Science Conference, Min Yu said: "Taching, one of the world's biggest oilfields, has registered an annual 28 percent increase in output in each of the past 18 years. Up to now, most of its wells continue to turn out oil by the economical and effective flowing method. This is a record that would be considered advanced in the oil industry anywhere in the world."

This success is attributable to the simultaneous grasping of the three great revolutionary movements of class struggle, the struggle for production and scientific experiment."

He continued: "From the outset, Taching attached great importance to scientific research. When its headquarters were still offices in what had been cattle pens, Taching began to build scientific research institutions that housed laboratories and a computer centre.

At present, Taching has 23 research institutes with a staff of 6,000. Under the leadership of party committees, the researchers constantly raise their socialist consciousness, strive to guide their work with dialectical materialism and study diligently to improve their professional skills. They have thus achieved outstanding achievements in geological research, drilling, oil extraction, oil and gas transportation, oil refining and other fields. Some of their achievements are up to advanced world levels.

In training scientific and technical personnel, Taching has laid great emphasis on fostering a revolutionary spirit. Only with this spirit is it possible to fear neither hardship nor death, to seek neither personal fame nor gain, to race against time, work with might and main and watch advanced world levels."

Min Yu said that Taching has carried out scientific research on key technical problems concerning the high-speed development of the oilfield, as well as on basic theories and some comprehensive, long-term topics.

"The masses of workers and cadres also take part in scientific research in Taching. Every ton of water injected, every ton of oil extracted and every metre of core lifted are data accumulated for scientific research. The fruits of research could rapidly be applied to production."

Min Yu recalled the attacks of Lin Piao and the "gang of four" against Taching and the struggle of the Taching workers, cadres and technicians against them. He pointed out that the smashing of the "gang of four" has fired the enthusiasm of scientists and technicians in Taching. In 1977, 35 percent of them were commended as advanced individuals for their achievements in scientific research.

Min Yu said that Taching had called a science conference in January this year. A new upsurge in scientific research has begun at the oilfield.

Looking ahead to the future, Min Yu concluded: "We are full of confidence in victory. Under the leadership of Chairman Hua and the party Central Committee, we will work to catch up with and surpass in a fairly short time advanced world levels in more fields, and advance on higher goals at a faster rate contributing our share to the building of some ten more oilfields as big as Taching.

Mathematician Chen Ching-jun Speech

OW271246Y Peking NCNA in English 1233 GMT 27 Mar 78 OW

[Text] Peking, 27 Mar (HSINHUA)--Chen Ching-jun, a Chinese mathematician who is known throughout the world for his research on the Goldbach Conjecture, spoke at today's session of the National Science Conference, presenting the background to his research on the theory of numbers.

In 1742 the German mathematician Goldbach put forward the following conjecture: "Any even number larger than 2 can be represented as the sum of two primes (1, 1)." For 200 years, many great mathematicians have tried to prove this conjecture, but have failed. Chen Ching-jun has produced the theorem: "Any sufficiently large even number can be represented as one prime plus the products of at most two primes (1, 2)." This is the closest that the scientific world has come to proving the conjecture.

The 45-year-old Chinese mathematician has loved mathematics since he was a schoolboy. Mathematics takes up most of his time, but also gives him his greatest joy. "I longed to take up the study of mathematics in my youth, but in the old society my family was too poor and I had no chance to finish high school. I studied by myself at home." His father was a post office employee. He went on: "I entered Amoy University in 1950, the year after liberation. The new society has provided excellent studying conditions for us. During my studies at college, everything was government subsidized. There is no comparison with pre-liberation days."

Chen Ching-jun plunged himself into the study of mathematics and graduated a year early with top marks. "After graduation," he said, "there was a time when I worked in the college library. I used all my spare time to study the mathematical papers of Professor Hua Lo-keng. I am intrigued by the theory of numbers."

In 1956, Chen Ching-jun produced a paper which came to the attention of Professor Hua Lo-keng and in which other mathematicians showed great interest. He was transferred to the Institute of Mathematics of the Chinese Academy of Sciences in September 1957. To broaden his knowledge to lay a firm foundation for proving the Goldbach Conjecture, Chen Ching-jun buried himself in the library. He read, thought, did calculations and often forgot meals. He learned English and Russian before he came to the institute and later he taught himself German and French in order to read more material.

He said: "By 1963, after 10 years of incessant preparation and gathering of material I was ready to tackle the Goldbach Conjecture." "By 1966 I had preliminary results from my research into this question. I proved that every sufficiently large even integer can be represented as the sum of a prime and a product of at most two primes (1, 2).

"Though my research results have proved (1, 2), my proof is too long, coming to over 200 pages. My method of calculation is too complicated and the number of representations rather small. I've decided to change to a new and simpler method.

"My health has never been good; ever since I graduated from college, I have had a lot of problems with my health, but I have felt I couldn't afford to lose time and any working towards a breakthrough requires hard work and all-out effort.

"To prove one theory, I sometimes have to use several, sometimes over a dozen methods, doing calculations on papers that can fill several sacks. The endless numbers, formulae and symbols may be dry and monotonous but they are necessary to make a breakthrough. By 1973 I finally succeeded in my new proof of (1,2)."

Chen Ching-jun recalled that once a professor from abroad had asked him what had prompted him to tackle so difficult a problem as the Goldbach Conjecture. He was now able to reply: "A spirit of dedication to science and great will power are the qualities required to make scientific breakthrough, yet, my experience with the Goldbach question has made me realize that in making scientific progress, personal endeavours are not enough.

"Without the superior socialist system, without party leadership at various levels, and without the support of my comrades, a person like myself with such bad health, would never have the courage or will power to challenge such difficult material." He undertook to continue his diligent work in the mathematical field, and said he would give his all to the development of science in China.

Chin Shan-pao Speech

OW271232Y Peking NCNA in English 1217 GMT 27 Mar 78 OW

[Text] Peking, 27 Mar (HSINHUA)--Speaking at the National Science Conference today, Chin Shan-pao, president of the Chinese Academy of Agricultural and Forestry Sciences, reviewed China's achievements in agricultural scientific research which have reached advanced world levesls. They include:

--The control of wheat stripe rust;
--The cultivation, application and popularization of dwarf varieties of rice and anti-rust varieties of wheat;
--The successful development and rapid application and popularization of hybrid rice;
--The cultivation of alloctoploid triticale;
--The cultivation of tobacco, rice and wheat varieties by monoploid breeding;
--The permanent control of the oriental grasshopper;
--The application on large areas of biological control of crops;
--The preparation of the vaccines for cattle plague and hog cholera;
--The artificial breeding of four major kinds of fresh water fish, black carp, grass carp, silver carp and big head.

Chin Shan-pao said: The control of wheat stripe rust was a result of scientific experiments carried out through the integration of specialists and the masses. This achievement, plus the building of farmland improvement and water conservancy projects, has resulted in a steady increase in wheat output in the leading wheat-growing areas of north China and northwest China. The output of wheat in 1976 was over 80 percent higher than that of 1965.

In the mid-1950's, he continued, China was the first to successfully cultivate and popularize a number of high-yield, dwarf strains of rice. These fine seed strains show no tendencies to lodging even with yield as high as 7.5 tons per hectare. On the average, their per-hectare output is 0.75 to 1.5 tons more than the long-stalked varieties. Due chiefly to this success, China's early rice output in 1976 had increased 2.6 times compared with 1965.

Chin Shan-pao pointed out that in recent years, China has made a major breakthrough in research on hybrid rice.

Hybrid varieties of Hsien rice cultivated for the first time were rapidly popularized last year to 2.13 million hectares and resulted in a 2-million-ton increase in yield.

82-year-old Chin Shan-pao has worked in agricultural scientific research and agricultural education for over half a century. Before liberation, he and his colleagues bred a good strain of wheat seed but had no chance to apply it in production. Only after liberation was the fine variety sown to large areas along the Yangtze River.

He stated that it is a glorious but difficult task to modernize China's agriculture by the turn of the century. A lot of agro-technical problems have to be solved to fulfill this task.

He proposed that the agricultural research institutions from the central down to production team level work in coordination, each with its own emphasis, and form a rationally-distributed countrywide network for agricultural experiment embracing a whole range of specialized branches.

The Chinese Academy of Agricultural and Forestry Sciences should concentrate its research on major problems that concern the whole country and on basic theory. In the light of China's geographical characteristics, a number of provincial and autonomous regional research institutions should be selected and built into regional and specialized research centres.

Chin Shan-pao also proposed that a mighty agricultural scientific and technical force be trained rapidly, agricultural education be expanded and key agricultural colleges be set up in every major region. At the same time, effective measures be taken to improve the professional efficiency of our present scientific and technical personnel. Scientific research institutions at all levels and state farms should train agro-technicians for communes and their sub-divisions.

He stressed coordinating efforts on research in major agricultural scientific projects. Owing to great coordination China has made a quick breakthrough in the research and testing of hybrid vigour of rice and leads the world in this field. This successful experience in coordination of agricultural research is a concrete manifestation of the superiority of China's socialist system.

REPORT OF SCIENTIFIC SUCCESSES ACCOMPANY SCIENCE CONFERENCE

OW250830Y Peking NCNA in English 0705 GMT 25 Mar 78 OW

[Text] Peking, 25 Mar (HSINHUA)--Reports of new successes in science and technology are pouring into Peking where the National Science Conference is currently in session.

During the past six months, Shanghai has completed 120 major items in scientific research. The city succeeded in making Ribonucleotide 12 in 1976, and last year again made segments of Ribonucleotide 16, laying a solid foundation for the artificial synthesis of nucleic acid.

The Shanghai Silicate Institute of the Chinese Academy of Sciences has turned out quartz fibre used as optical wave-guides in laser communications. This new material has been used in telephone and television equipment in Shanghai, Kweilin and Peking with great success.

The Shanghai No 9 cotton mill recently adopted electrostatic spinning, making a 63 percent increase in the average output of cotton yarn per 1,000 spindles per hour.

Institutions of higher education and scientific researchers in east China's Anhwei Province last year completed 94 items of scientific research, some of them reaching advanced levels.

Hofei Industrial University and other units made a laser scaleless topography surveying instrument, contributing to the use of laser technique in China. Earlier, the university made a laser instrument for iridotomy.

The China University of Science and Technology cooperated with other units and turned out a scintillation gamma-ray intensity indicator. Satisfactory results were obtained when it was used in several hospitals.

The Anhwei Labour Academy collected extensive meteorological data and compiled a book, "Meteorology and Agriculture."

Wuhan city in central China's Hupeh Province completed 489 major items of research, setting a record.

The Wuchang powerplant used a cyclone boiler to produce calcium-magnesium-phosphate fertilizer. 87 percent less coal was used and the cost was halved when compared with the use of blast furnaces.

Among the latest achievements are also a vertical 4-me[illegible] axial flow p[illegible]p with a h[illegible] lifting capacity, a hundred-ton electronic track scale which weighs freight wagons in motion, and polyphenyl sulfone for engineering plastics.

Blasting Expert's Success

OW270846Y Peking NCNA in English 0809 GMT 27 Mar 78 OW

[Text] Peking, 27 Mar (HSINHUA)--Among the delegates to the National Science Conference is the designer of a new directional blasting method for mine-digging, dam-building and rural water conservancy. He is 45-year-old Ma Nai-yao, a graduate of Tsinghua University who became assistant chief engineer of the Kwangtung Provincial Bureau of Water Conservancy and Power. He saw the need for improved blasting techniques and worked them out at the same time that he did his regular engineering work, and finally he became a blasting expert.

Ma Nai-yao's new method is called continuous directional blasting. It was first used to put up a 60-metre-high river dam. Much more effective than conventional directional blasting, the new technique put the project through 7 months ahead of schedule at savings of 6 million yuan and 2 million work-days. When his method was used to open an iron mine in Kwangtung Province, 675 tons of dynamite blew 780,000 cubic metres of rock into position in a single chain of blasts, again at a great saving in time, manpower and money.

Ma Nai-yao recalls how work on a dam for a hydropower plant came to a sudden stop in 1960 when the Soviet revisionists tore up their contracts with China and withdrew their experts. He was still new at blasting, but he stepped forward boldly to tackle the problem, going through reams of data and consulting experienced blasters until he was able to carry through a successful directional blast.

'ABRIDGEMENT' OF FANG I REPORT TO NATIONAL SCIENCE CONFERENCE

CW282029Y Peking NCNA in English 2013 GMT 28 Mar 78 OW

[Text] Peking, 28 Mar (HSINHUA)--Following is an abridgement of the report made by Fang I, member of the Political Bureau of the Central Committee of the Communist Party of China, vice-premier of the State Council and minister in charge of the State Scientific and Technological Commission, at the National Science Conference here on March 18:

This National Science Conference is being held under the direct leadership and warm attention of the party Central Committee headed by our wise leader Chairman Hua. It is an unprecedented gathering for our scientific and technological circles and a major event on which the people of all our nationalities are focussing attention. I am instructed by Chairman Hua and the party Central Committee to speak on the following questions.

I. A New Stage in the Development of China's Socialist Cause of Science and Technology

The convocation of our National Science Conference is drawing general attention both at home and abroad, among our comrades and friends and among our enemies.

China is a socialist country with one-fifth of the world's population. The party's 11th National Congress and the Fifth National People's Congress set our goal for the rest of this century with the decision to mobilize the whole party, the whole army and the people of all our nationalities to march towards the modernization of agriculture, industry, national defence and science and technology. This new Long March on which we are embarking is highly important and naturally attracts world-wide attention.

This enormous task put forward by our great leader and teacher Chairman Mao is a logical continuation of the overall process of the revolution led by the Chinese Communist Party for over half a century. The anti-party "gang of four" of Wang Hung-wen, Chang Chun-chiao, Chiang Ching and Yao Wen-yuan--the bane of the nation--violently opposed the four modernizations in an attempt to stifle our great socialist cause. The party Central Committee headed by Chairman Hua, holding high the great red banner of Mao Tsetung Thought, smashed the "gang of four" at one stroke, thus ushering in a period of new development in China's socialist revolution and socialist construction. The dark clouds have been dispelled and the way has been cleared. A bright future is ahead of us. Guided by the strategic decision of Chairman Hua and the party Central Committee to grasp the key link of class struggle and bring about great order across the land, a new situation of growing prosperity has appeared on all fronts. The objective of initial success in the first year was realized. The party Central Committee headed by Chairman Hua attaches great importance to our scientific and technical work and pays great attention to our scientific and technical forces. Chairman Hua proposed that a National Science Conference be held, giving a very important place to scientific and technical work. China's socialist cause of science and technology is entering a new stage of flourishing growth.

PEOPLE'S DAILY EDITOR'S POSTSCRIPT ON PANAMA CANAL TREATY

HK280605Y Peking PEOPLE'S DAILY in Chinese 23 Mar 78 p 6 HK

[PEOPLE'S DAILY editor's postscript to NCNA report on the Panama Canal treaty published on page A 30 of the 23 March DAILY REPORT]

[Text] For over 70 years, the Panamanian people have waged a heroic struggle to regain sovereignty over the Canal Zone and have compelled the United States on two occasions to make changes in the canal treaty. In January 1964, following the storm of the world-shaking struggle whipped up by the Panamanian people, the U.S. Government was again forced to enter into negotiations with Panama, and a new treaty was finally signed by the two sides last September. This is an important victory in the protracted struggle waged by the Panamanian Government and people, and it is widely supported and welcomed by various governments and public opinion.

However, the struggle is by no means over. To regain complete sovereignty over the Canal Zone, the Panamanian people must continue their arduous struggle. When the treaty bills concerning permanent neutrality and administration came before the U.S. Senate for ratification, some of the senators held a negative attitude and attempted to make changes in the new canal treaty signed by the heads of the two states. Torrijos, the Panamanian chief of government, solemnly said that any change detrimental to the national dignity and sovereignty of Panama would be unacceptable. Facts have proved that the persevering struggle of the Panamanian people will make it difficult for hegemonism to succeed.

PANAMANIAN PAPER CITED ON SOVIET, CUBANS IN AFRICA

OW232047Y Peking NCNA in English 1514 GMT 23 Mar 78 OW

[Text] Panama City, 22 Mar (HSINHUA)--"Russia has turned the beautiful Cuba of the previous day into its principal source of cannon fodder", says the Panamanian paper CRITICA in an article today.

The article continues that the Russians have sent Cuban soldiers to Africa and turned them into cannon fodder. This is just the same as what the United States did in the wars of Korea and Vietnam by using Puerto Rican and black soldiers as cannon fodder. Up to now, the article says, "quite a few Cubans have lost their lives for Russia. Unofficial statistics show that about 2,000 Cubans have died in Angola and the Horn of Africa."

When those Cubans were dying for the benefit of the Soviet Union, the paper points out, "the rosy-cheeked and well-nourished Russian soldiers were watching the bull-fight outside the barrier. Hundreds and even thousands of Russians are stationed in various conflicting areas of Africa and other parts of the world, but only as 'military advisors'... fighting the war is left for the Cubans and Africans who will die for them."

The article concludes that it is a common practice for certain big powers to push the policy of sending others to fight. But this was done covertly in the past. Nowadays, however, the Russians "do it brazenly".

BRIEFS

CHARGE TO BARBADOS--Peking, 28 Mar (HSINHUA)--Yang Ta-chun [2799 6671 5028], charge d'affaires ad interim of the Embassy of the People's Republic of China in Barbados, left Peking for his post by air today. [Text] [Peking NCNA in English 1522 GMT 28 Mar 78 OW]

Under the leadership of Chairman Hua and the party Central Committee, our comrades on the scientific and technical front are intensifying their study of Marxism-Leninism-Mao-Tsetung Thought in the struggle against the anti-party "gang of four," summing up experience in relation to the development of science and technology in the 28 years since the founding of new China, and consolidating and building up their ranks so as to accelerate progress. Major issues of right and wrong concerning the political line in scientific and technical work which were long confounded by the "gang of four" have been basically clarified.

The "gang of four" had intense hatred for science and willfully negated the great role of science and technology. They opposed our efforts to grasp simultaneously the three great revolutionary movements of class struggle, the struggle for production and scientific experiment and wreaked havoc with the revolutionary movement for scientific experiment on the absurd pretext of "opposing restoration". The absurdities of the "gang of four" have been exploded.

Marxists have always held that science and technology are a revolutionary force, a motive force for historical advance. Natural science is a weapon with which people can win freedom. Natural science and production techniques have no class nature in themselves. They sum up experience accumulated by all mankind over long years of struggle in production and scientific experimentation. Science and technology belong to the forces of production, not to the superstructure. In the course of revolution, the proletariat should overthrow the old superstructure, smash the old state apparatus and effect a complete break with the old ideology. At the same time, it should firmly protect and actively develop science and technology and give the fullest play to their revolutionary role in hastening historical progress. The proletariat, which is closely linked with advanced social productive forces, has a greater need than any other class in history for a flourishing, forward-moving science and technology.

Marx and Engels enthusiastically hailed every major new discovery in science and technology. Right up the last few days of his life Marx closely followed the installation of the first experimental power transmission line. Engels pointed out: "In fact, this thing is enormously revolutionary." Speaking of the revolution of 1848 that swept Europe, Marx perceptively pointed out that, to the reactionaries, steam, electricity and the self-acting mule [as received] were "revolutionists of a rather more dangerous character" than Barbes, Raspail and Blanqui who were then leaders of the French Revolution. After winning state power, the proletariat must make a vigorous, conscious effort to develop science and technology so as to raise socialist production as quickly as possible to a level much higher than capitalist production. This task is even more arduous and pressing for the proletariat which has won state power in an economically and technically backward country. Lenin said on many occasions: "In the last analysis productivity of labour is the most important, the principal thing for the victory of the new social system." For labour productivity to attain a higher level than that achieved under capitalism, science and technology must be modernized. Formulating the problem in accordance with the basic principles of Mrxism, Chairman Mao put forth the brilliant thesis that in socialist society it is imperative to carry out the three great revolutionary movements of class struggle, the struggle for production and scientific experiment. This was one of his important contributions to the theory of scientific socialism.

Chairman Hua has instructed us to grasp the three great revolutionary movements simultaneously and raise the scientific and culutral level of the entire Chinese nation. He has called on us to advance towards the modernization of science and technology. This is a shining example of the application of Mao Tsetung Thought.

Chairman Hua's important instruction, which is finding its way ever deeper into the hearts of the people and of which leading cadres at all levels and the masses are acquiring an ever better understanding of the current momentous struggle to expose and criticize the "gang of four", is a powerful ideological weapon for us in developing science and technology in the new stage. We must grasp the three great revolutionary movements simultaneously if we really want to build socialism, strengthen the dictatorship of the proletariat and prevent capitalist restoration. Otherwise, our desire would only be sham or in vain. Our revolution needs science, so does production, and the people need it too. If we are eager for socialism, we should also be eager for science and technology. No one who is against science can possibly be a revolutionary.

The "gang of four" vilified the leadership exercised over the scientific and technical front by the party Central Committee headed by Chairman Mao, attacked our party's correct principles and policies guiding scientific and technical work, denied the great achievements scored on this front since the founding of new China, and slandered our scientific and technical work as being dominated by a revisionist line. All these absurdities of the gang have been exploded, too.

As we all know, Chairman Mao formulated for our party the basic line for the entire historical period of socialism and the general line for building socialism and, at the same time, laid down the specific line, principles and policies for our scientific and technical work. All the major policy decisions concerning science and technology were examined and approved by the party Central Committee headed by Chairman Mao. The party Central Committee and the Central People's Government headed by Chairman Mao decided in November 1949 to establish the Chinese Academy of Sciences. A National Conference of Representatives of Natural Science Workers was held in 1950 with the attention of Chairman Mao and under the leadership of Premier Chou En-lai. An ideological remoulding movement was carried out in line with Chairman Mao's instructions by the intellectuals in 1951. This was followed by a conference on problems concerning intellectuals in January 1956 under the personal guidance of Chairman Mao, at which Premier Chou made an important report. At that conference and the ensuing supreme state conference, Chairman Mao set forth the task of rapidly reaching advanced world levels economically, scientifically and culturally in a few decades. He called for advances in science and laid down the principle of letting a hundred flowers blossom and a hundred schools of thought contend.

China's first long-range plan for the development of science and technology, that is, the 12-year plan, was worked out the same year under the guidance of Premier Chou and Comrades Chen I, Li Fu-chun and Kuo Ko-jo and approved by the party Central Committee headed by Chairman Mao. In 1958, Chairman Mao issued a call to do away with blind faith, emancipate the mind and bring about a Great Leap Forward, and set the task of technical revolution for the whole party, thus greatly acclerating the development of science and technology.

Following Chairman Mao's teachings, the leading party groups of the State Scientific and Technological Commission and the Chinese Academy of Sciences, under the direction of Comrade Nieh Jung-chen, in 1961 summed up our experience and drew up "Some Questions Concerning the Present Work of the Research Institutions in Natural Science (Draft)", also known as the 14-point document on scientific research. This gave concrete explanations and laid down stipulations on a series of principles and policies guiding scientific research work. The document, which was examined and approved by Chairman Mao and ratified by the party Central Committee for trial implementation, played an effective part in advancing science and technology in China.

When the main tasks set out in the 12-year plan had been completed in 1962, five years ahead of schedule, a second plan, that is, the ten-year plan, was drafted under the direction of Premier Chou and Comrade Nieh Jung-chen. The party Central Committee headed by Chairman Mao approved the plan the following year, and he explicitly pointed out that it was imperative to tackle science and technology, otherwise the productive forces could not be expanded. China successfully exploded an atom bomb in 1964 and became one of the countries in the world to possess nuclear weapons. Chairman Mao acclaimed with joy the hard work the comrades had done and gave them encouragement and support in their continued advance.

In 1966, Chairman Mao initiated and led the Great Proletarian Cultural Revolution and asked Premier Chou to look into the movement in the State Scientific and Technological Commission and the Chinese Academy of Sciences. In active response to Chairman Mao's call, the scientific and technical workers plunged into the great struggles against the counter-revolutionary revisionist lines of Liu Shao-chi, Lin Piao and the "gang of four". Chairman Mao and Premier Chou gave repeated instructions in 1972 on strengthening research in the basic theories of natural science in order to counter the disruption and sabotage of scientific research work by Lin Piao and the "gang of four".

Comrade Hua Kuo-feng took charge of scientific and technical work in 1975 on the instructions of the party Central Committee. The principal leading comrades of the Chinese Academy of Sciences, after thorough investigation and extensive canvassing of the opinions of the masses, prepared an "Outline Report" on the work of the academy in accordance with the instructions of Comrades Hua Kuo-feng and Teng Hsiao-ping on consolidating the Chinese Academy of Sciences and on pushing forward our scientific research work. Under the conditions prevailing at the time, this document was in essence a revolutionary call to arms to condemn Lin Piao and particularly the "gang of four" for disrupting our endeavours in science and technology. The State Council discussed the document. Chairman Mao went over it. While the Chinese Academy of Sciences was revising the Outline Report on the instructions of Chairman Mao and the party Central Committee, however, the "gang of four" came out with the slander that the document was a "big poisonous weed" and launched an "encirclement and suppression campaign" against it as part of their plot to usurp party and state power. The masses on the scientific and technical front firmly defended Chairman Mao's revolutionary line and fought heroically against the gang, showing a high degree of awareness of the rights and wrongs in the 11th struggle between the two lines.

Statistics show that over 90 percent of the professional scientific and technical workers have been trained by our party since liberation, and more than two-thirds of them come from families of labouring people. The overwhelming majority of scientific and technical workers trained since liberation, including a section not from families of labouring people, have deep feelings for the party and the workers, peasants and soldiers and are conscientious in studying Marxism-Leninism-Mao Tsetung Thought; they constitute a new force of intellectuals belonging to the working class. The overwhelming majority of scientific and technical workers from the old society support the party's leadership, love our socialist motherland and work hard to serve the people; they have made progress to varying degrees in transforming their world outlook and an increasing number have turned into working class intellectuals. In line with Chairman Mao's teachings, the scientific and technical workers have made it a regular practice to integrate and identify themselves with the workers, peasants and soldiers. We have already built a Red-and-expert scientific and technical contingent of the working class. As for all other patriotic scientific and technical workers, we should acknowledge the importance of their role, correctly implement the party's policy on intellectuals and create favourable conditions for their work.

Lenin said shortly after the October Revolution in Russia: "We must not practice a policy of petty pinpricks with regard to the experts. These experts are not the servitors of the exploiters, they are active cultural workers, who in bourgeois society served the bourgeoisie, and of whom all socialists all over the world said that in a proletarian society they would serve us." The experience of our revolution has further testified to the complete correctness of this thesis of Lenin's. All slanders and false charges levelled at scientific and technical workers by the "gang of four" should be repudiated and cancelled. We rejoice wholeheartedly at the progress made by our scientific and technical workers. We hope that they will make constant efforts to transform their world outlook, raise their scientific and technical level and press ahead on the road of becoming both Red and expert. We are convinced that in the new stage they will rally still more closely round the party Central Committee headed by Chairman Hua, unite as one and make still greater contributions to the people.

II. Foster Lofty Ideals, Set High Goals, March Toward the Modernization of Science and Technology

Chairman Mao and Premier Chou mapped out a gigantic plan for us to make China a modern, powerful socialist country. By the end of this century, all departments and localities in China that can use machines must be fully mechanized, electrification must be realized in both urban and rural areas, the production processes in major industrial departments automated, advanced techniques extensively applied, labour productivity raised by big margins, and a radical change brought about in industrial and agricultural production so that our national economy can take its place in the front ranks of the world. We must equip our armed forces with the latest achievements in science and technology and greatly enhance our national defence capabilities. We must build a vast army of working-class scientists and technicians who are both Red and expert, and we must have our own experts in science and technology who are first rate by world standards. We must also acquire the most sophisticated equipment for scientific experimentation so that we can approach advanced world levels of that time in most branches of science and technology, catch up with them in some other branches and take the lead in certain branches.

When these are done, we can say that we have realized by and large our objective of modernizing agriculture, industry, national defence and science and technology. China will radiate an even greater brilliance throughout the world.

The eight years from now through 1985 are crucial for the perspective long-term plan mentioned above. We must follow the inscription written by Chairman Hua for this conference: "Foster lofty ideals, set high goals and march towards the modernization of science and technology", work out a strategic plan, fully mobilize all positive factors and organize all our forces well.

Our plan should be aimed at helping the realization of the four modernizations. The key to this lies in the modernization of science and technology. The whole party, the whole army and the people of all our nationalities are pinning high hopes on the speedy development of science and technology and they expect us to make a great contribution to the four modernizations. This is also the aspiration and determination of our comrades on the scientific and technical front. Our plan must meet the needs of the four modernizations and the needs for developing our national economy and building our national defence. The plan on science and technology must dovetail with the plan on production and construction and the two must be organically combined. Research in applied sciences and in basic theories and the immediate and long-term tasks must be properly arranged to avoid overemphasizing one to the neglect of the other.

Our plan should be aimed at high-speed development. Compared with advanced world levels in science and technology, our country is now lagging 15 to 20 years behind in many branches and more still in some others. Modern science and technology are developing rapidly; while we are trying to catch up with and surpass other countries, they are also forging ahead. Only by developing at a higher speed can we catch up with or surpass the capitalist countries. We won high speed by fulfilling five years ahead of schedule the major targets specified in the 12-year plan for the development of science and technology mapped out in 1956. In the mid-1960's we approached advanced world levels at the time in some scientific and technical spheres and achieved a number of outstanding successes which helped the popularization of some new techniques and the building of some new, rising industries. Now that we have much better conditions and much better foundation than in those days, a much higher speed is entirely possible.

Our plan should, moreover, be an advanced one with the present-day advanced levels as its starting point. In scientific and technological research, we must do away with blind faith, emancipate the mind, be good at learning from the advanced and dare to break with conventional practices. We should conscientiously assimilate the experience and lessons of our predecessors so as to avoid the twists and turns they went through. In carrying out the first plan for the development of science and technology, we worked in the correct direction by taking semi-conductor technology, which was an advanced branch of science at the time, as our starting point for studying and developing electronic computers. As a result, we soon passed the stage of the electron tube and gained time. In the years to come, we should base our research work in all branches of science on the mastery of the latest scientific and technological achievements and be courageous in breaking new ground. We must work hard to raise all our scientific research work to advanced levels as quickly as possible. Scientific experiments by the masses should also be steadily improved on the basis of popularization.

We should implement in its entirety the Eight-Point Charter for Agriculture (soil, fertilizer, water conservancy, seeds, close planting, plant protection, field management and improved farm tools) and raise our level of scientific farming so as to bring about a big increase in agricultural output. We should study and evolve a farming system and cultivating techniques that will carry forward our tradition of intensive farming and at the same time suit mechanization, and manufacture farm machines and tools of high quality and efficiency. We will study science and technology for improving soil, controlling water, drastically changing the conditions of our farmland and turning it into crop fields that give stable and high yields. In order to improve as quickly as possible the low-yielding farmland that accounts for about one-third or more of the country's total, the must make major progress in improving alkaline, lateritic, clay and other kinds of poor soil, in preventing soil erosion and in combating sandstorms and drought. We will study projects for diverting water from the south to the north and relevant scientific and technical problems; study and develop new compound fertilizers and biological nitrogen fixation, methods of applying fertilizer scientifically and techniques for drainage and irrigation, cultivate new seed strains, develop new techniques in seed cultivation and improve the fine crop varieties in an all-round way so that they will give still higher yields, produce seeds of better quality and can better resist natural adversities. We should quickly find out new insecticides that are highly effective and are harmless to the environment, and develop techniques for simultaneous prevention and treatment of different kinds of plant diseases and pests.

We need to step up scientific and technological research in forestry, animal husbandry, sideline production and fisheries and promote an all-round development of these branches. We should provide new tree seeds and techniques that will make the woods grow fast and yield more and better timber, develop multi-purpose utilization of forest resources and study techniques and measures for preventing and extinguishing forest fires; step up research on building pasturelands, improving breeds of animals and poultry, mechanizing the process of animal husbandry, increasing water life production, fish breeding, marine fishing and processing so as to make our contribution to improving the ingredients of the people's diet.

We will set up up-to-date centres for scientific experiments in agriculture, forestry, animal husbandry and fisheries, and organize all departments and branches of science to tackle key problems by coordinated efforts and accumulate experience.

We must lay great emphasis on research in the basic theories of agricultural science, step up our study in the application of agricultural biology, agricultural engineering and new technologies to agriculture, so as to lay a solid scientific foundation for constant innovations in agrotechniques and steady expansion of production.

Science and technology of energy: Energy resources are an important material basis for developing agriculture, industry, national defence and science and technology and for improving the people's livelihood. Every major breakthrough in science and technology concerning energy resources has led to a revolution in production techniques. We must energetically accelerate the development of energy science and technology so as to carry on full and rational exploitation and utilization of our energy resources and ensure sustained, speedy development of the national economy.

We have our own inventions in the science and technology of the oil industry, and in some fields we have caught up with or surpassed advanced levels in other countries. We must continue our efforts to catch up with and surpass advanced world levels in an all-round way. We should study the rules and characteristics of the genesis and distribution of the oil and gas in the principal sedimentary regions, develop the theories of petroleum geology and extend oil and gas exploration to wider areas; study new processes, techniques and equipment for exploration and exploitation and raise the standards of well drilling and the rate of oil and gas recovery; and actively develop crude oil processing techniques, use the resources rationally and contribute to the building of some ten more oilfields, each as big as Taching.

China has extremely rich resources of coal, which will remain our chief source of energy for a fairly long time to come. In the next eight years, we should basically mechanize the key coal mines, achieve complex mechanization in some of them and proceed to automation. The small and mediumsized coal mines should also raise their level of mechanization. Scientific and technical work in the coal industry should centre around this task, with active research in basic theory, mining technology, technical equipment and safety measures. At the same time research should be carried out in the gasification, liquefaction and multi-purpose utilization of coal and new ways explored for the exploitation, transportation and utilization of different kinds of coal.

We must push up the power industry as a pressing task. We should take as our chief research subjects the key technical problems in building large hydroelectric power stations and thermal power stations at pit mouths, large power grids and super-high-voltage power transmission lines. China has a great abundance of water power resources. We must concentrate our efforts on comprehensive research in the techniques involved in building huge dams and giant power generating units and in geology, hydrology, meteorology, reservoir-induced earthquakes [as received] and engineering protection which are closely linked with large-scale hydroelectric power projects.

We should devote great efforts to exploring new sources of energy in order to change China's energy pattern gradually. Atomic power generation is developing rapidly in the world, and we should accelerate our scientific and technical research in this field and speed up the building of atomic powerplants. We should also step up research in solar energy, geothermal energy, wind power, tide energy and controlled thermonuclear fusion, pay close attention to low-calorie fuels, such as bone coal, gangue and oil shale and marsh gas resources in the rural areas, and make full use of them where possible.

The techniques for the rational utilization and saving of energy present an important question that must be solved. People in all professions and trades should study this question, make full use of surplus heat, study and manufacture fine and efficient equipment for this purpose, try their best to lower energy consumption and particularly coke consumption in iron smelting, coal consumption in power generation and energy consumption in the chemical and metallurgical industries.

Science and technology concerning materials: Painstaking research in this field is of paramount importance to the all round modernization of agriculture, industry, national defence and science and technology.

Steel must be taken as the key link in industry. Great efforts must be made to grasp metallurgical science and technology. It is imperative to make a breakthrough in the new technology of intensified mining and solve the scientific and technological problems of beneficiating hematite so as to provide the iron and steel industry with large quantities of raw materials. We should speed up research work on the paragenetic deposits at Panchihhua, Paotow and Chinchuan where many closely associated metals have been formed, solve the major technical problems in multi-purpose utilization, intensify research on the exploitation of copper and aluminium resources, make China one of the biggest producers of titanium and vanadium in the world and approach or reach advanced world levels in the techniques of refining copper, aluminum, nickel, cobalt and rare-earth metals. We should master modern metallurgical technology quickly, increase varieties and improve quality; study and grasp the rules governing the formation of high-grade iron ore deposits and the methods of locating them; establish a system of ferrous and non-ferrous materials and extend it in the light of the charateristics of our resources.

We should make full use of our rich natural resources and industrial dregs and increase at high speed the production of cement and new types of building materials which are light and of high strength and serve a variety of purposes; step up research in the technology of mining and dressing non-metal ores and in the processing techniques; lay stress on research in the technique of organic systhesis with petroleum, natural gas and coal as the chief raw materials, step up our studies of catalysts and develop the technology of direct synthesis; renovate the techniques of making plastics, synthetic rubber and synhetic fibre and raise the level of equipment and automation in the petrochemical industry. We must solve the key scientific and technical problems in producing special purpose materials, structural materials and compound materials necessary for our national defence industry and new technology and evolve new materials characteristic of China's resources.

We should devote great efforts to basic research on the science of materials, develop new experimental techniques and testing methods and gradually be able to design new materials with specified properties.

Electronic computer science and technology: Electronic computers have been used ever more extensively with far-reaching effects in scientific research, industry, agriculture, national defence and social life. At present the electronic computer is developing in the following directions: giant computers, microcomputers, computer networks and intelligence simulation. The scientific and technical level, scope of production and extent of application of computers has become a conspicuous hallmark of the level of modernization of a country.

China must make a big new advance in computer science and technology. In the next three years we should rapidly develop basic research on computer science and related disciplines, lose no time in solving the scientific and technical problems in the industrial production of large-scale integrated circuits, and make a breakthrough in the technology of ultra-large-scale integrated circuits. We should turn out giant computers, put a whole range of computers into serial production, step up study on peripheral equipment and software of computers and on applied mathematics, and energetically extend the application of computers. We aim to acquire by 1985 a comparatively advanced force in research in computer science and build a fair-sized modern computer industry.

Microcomputers will be popularized and giant ultra-high-speed computers put into operation. We will also establish a number of computer networks and data bases. A number of key enterprises will use computers to control the major processes of production and management.

Laser science and technology: This is one of the most active branches of science and technology which began to develop in the 1960's. Its emergence, which marked a new stage in man's control and utilization of light waves, has effectively promoted the development of physics, chemistry and biology. Laser has been widely used in material processing, precision measurement, remote ranging, holography, telecommunications, medical treatment and seed breeding. It has broad prospects in isotope separation, catalysis and information processing. Laser fusion is an important approach in exploring controlled thermonuclear reaction.

We will study and develop laser physics, laser spectroscopy and non-linear optics in the next three years. We should solve a series of scientific and technical problems in optical communications, raise the level of routine lasers quickly and intensify our studies of detectors. We expect to make discoveries and creations in the next eight years in exploring new types of laser devices, developing new wave-lengths of lasers and studying new mechanisms of laser generation, making contributions in the application of lasers to studying the structure of matter. We plan to build experimental lines of optical communications and achieve big progress in studying such important projects of laser applications as separation of isotopes and laser-induced nuclear fusion. Laser technology should be popularized in all departments of the national economy and national defence.

Space science and technology: Space science and technology has been used in many aspects of the military, the national economy and scientific research so that man is beginning to extend his activities to the boundless universe. The development of space science and technology is bringing about tremendous changes in earth science, astronomy and other disciplines. Space technology has raised such work as meteorological observation, survey of resources, environment monitoring and cartographic survey to the level of concentrated automation. This not only saves large amounts of manpower and time but makes possible a timely collection of a greater wealth of data. As an information transmission centre, the man-made earth satellite can send messages directly to different places, thus causing radical changes in the technical system of communications, television and radio broadcasting.

We should attach importance to the study of space science, remote sensing techniques and the application of satellites; build modern centres for space research and systems for the application of satellites; step up the development of the vehicle series, and study manufacture and launch a variety of scientific and applied satellites; actively carry out research in the launching of skylabs and space probes; and conduct extensive research in the basic theory of space science and the application of space technology.

High energy physics: High energy physics is a branch of science that studies the structure of elementary particles and the sublevel structure of matter and the laws governing their interaction. At present, new particles and new phenomena are being discovered and theoretical research is deepening, bringing about new changes in high energy physics every day and making it one of the most active frontline branches of study in the development of natural science of our time.

We expect to build a modern high energy physics experimental base in ten years, completing a proton accelerator with a capacity of 30,000 million to 50,000 million electron volts in the first five years and a giant one with a still larger capacity in the second five years. Completion of this base will greatly narrow the gap between our high energy accelerators and advanced world levels and will stimulate the development of many branches of science and industrial technology.

We should from now on set about the task in real earnest and make full preparations for experiments in high energy physics, with particular stress on studying and manufacturing detectors and training laboratory workers. We should step up research in the theory of high energy physics and cosmic ray, consciously promote the interpenetration of high energy physics and the neighbouring disciplines, actively carry out research in the application of accelerator technology to industry, agriculture, medicine and other spheres, and pay attention to the exploration of subjects which promise important prospects of application.

The high energy physics experimental base is a key project on the nation's list of scientific research centres, and it is necessary to organize the forces of all quarters to build and use it jointly.

Genetic engineering: It is possible for genetic engineering, an outgrowth of molecular biology, to splice and transfer genetic substance at the molecular level and create new biological species to meet the needs of humanity. Genetic engineering provides an effective means of experiment for such basic studies concerning higher organisms as cell differentiation, growth and development and formation of tumours. It is likely to open new vistas for momentous changes in agriculture, industry, medicine and certain other fields of production.

Genetic engineering is a new branch of study which appeared in the 1970's. Fast developing and highly explorative, it deals with a wide range of disciplines and technologies, yet our country has only a rather weak foundation in this respect. Therefore, we must in the next three years strengthen organization and coordination and step up the tempo of building and improving the related laboratories and conduct basic studies in genetic engineering. In the next eight years, we should combine them with the studies in molecular biology, molecular genetics and cell biology and achieve fairly big progress. We should study the use of the new technology of genetic engineering in the pharmaceutical industry and explore new feasible ways to treat certain difficult and baffling diseases and evolve new high-yield crop varieties capable of fixing nitrogen.

We must grasp firmly and effectively the above eight important spheres and organize all forces to tackle the major problems by concerted effort. But this in no way means that we can neglect work in other spheres. All branches of science and technology have their specific positions and roles in our socialist construction, and none can be dispensed with or replaced. It is precisely as a result of the interaction and interpenetration of different branches of study that new disciplines have kept emerging. We should grasp the key spheres well on the one hand and make over-all planning and give all-round consideration on the other. Make all-round arrangements while laying emphasis on the key points--this is our policy.

Here I would like to mention in particular the question of multi-purpose utilization.

Chairman Hua has given this instruction: "We must attach importance to multi-purpose utilization which makes full use of natural resources and alleviates pollution of the environment. The three industrial wastes (liquids, gases and dregs) will bring harm if they are discarded but will become treasures if they are turned to good account." People working in all professions and trades should go in for multi-purpose utilization and the departments concerned should be organized to concentrate their forces on tackling major scientific and technical problems.

Copies of the "Outline National Plan for the Development of Science and Technology 1978-1985 (Draft)" have been distributed to you for your examination.

III. Mobilize the Whole Party To Develop Science Energetically

The march toward the modernization of science and technology is the common task of the whole party, the whole army and the people of all our nationalities. This great march means in essence a comprehensive and fundamental technical transformation of all fields of material production in our country. This is a great technical revolution that history has entrusted to us. Accomplishment of this revolution depends on leadership by the party and on the people of the whole country. Our party organizations at all levels, first of all the leading party groups of the ministries and commissions under the State Council and the party committees of the provinces, municipalities and autonomous regions, must earnestly implement the instructions of Chairman Hua, simultaneously grasp the three great revolutionary movements of class struggle, the struggle for production and scientific experiment, and do the following work well in a down-to-earth manner:

(1) Consolidate the Scientific Research Institutions and Build Up a Scientific and Technological Research System

It is imperative to continue fulfilling all the requirements set in the CCP Central Committee's "Circular on the Holding of a National Conference on Science" and lose no time in making a success of the work of consolidation and in implementing party policies. The party committees at various levels have done a great deal in this respect in the last few months. But the development has been uneven. In some departments and localities the leadership lags far behind the mass movement. This state of affairs must be changed quickly.

The present distribution of our specialized scientific research institutions is not entirely rational, some branches of study are not covered, and some institutions are confronted with quite a number of problems regarding their system of leadership and their orientation and tasks. All this points to the need to devote great efforts to consolidating and building up these institutions. In the next eight years, we must create a nation-wide scientific and technological research system that covers all branches of study, which should complement each other and be rationally distributed and developed in coordination, and that integrates professionals with the masses and military research efforts with those undertaken in the civilian sector.

The Chinese Academy of Sciences, the various departments under the State Council and the key universities and colleges must concentrate their efforts on restoring, strengthening and building a number of key scientific research institutions.

They must pay particular attention to strengthening research in those disciplines where the work has been weak and building and expanding a number of research institutions in the basic sciences and new branches of science and technology where there is an urgent need.

The provinces, municipalities and autonomous regions must establish and strengthen research institutions that suit the needs of economic development and their natural conditions and resources. If it is at all possible, branches of the Chinese Academy of Sciences or local academies of sciences are to be established where they are needed. Special attention should be paid to the establishment and development of scientific research institutions in the interior and in areas inhabited by the minority nationalities.

All large industrial and mining enterprises should take active steps to establish and strengthen research institutions. Small and medium-sized factories and mines may establish research institutions independently or jointly, according to the situation. Scientific research groups, technical innovation groups or teams for tackling difficult scientific and technical problems should be set up wherever possible.

Big efforts should be made to strengthen research institutions in agronomy and farm machinery and tools at the county level and, with these as the nucleus, consolidate and expand the network of agro-science institutions and agrotechnical stations at county, commune, production brigade and production team levels.

We must lose no time in consolidating the existing scientific research institutions, particularly the key ones. We must first of all consolidate their leading bodies. It is imperative that party committee secretaries are selected from among comrades who have a good understanding of party policies and are eager to promote science, that experts or near-experts are appointed to leading professional posts, and that conscientious and hard-working comrades are given charge of supply services. It is imperative to remove from leading bodies those persons who are politically bad and make political "earthquakes," persons who belong to the "weathervane school" and the "slippery school," as well as persons who have committed serious mistakes but refuse to mend their ways. Neither should persons who do not act according to party policies and are not enthusiastic about science be appointed to leading posts.

The system of institute directors assuming responsibility under the leadership of the party committees must be applied in scientific research institutions. The orientation and the selection of projects and personnel of the research institutes and their sub-divisions should be determined after extensive and serious discussions by the masses and once decided should be kept relatively stable. There must be a good apportionment of personnel of different categories in a scientific research institution and the present irrational situation in this respect must be changed as quickly as possible.

(2) Open Broad Avenues to Able People and Recruit Them Without Overstressing Qualifications

The recruitment of able people is a key question in modernizing science and technology. Only with able people can we get worthwhile results. Resolute measures must be taken to train able people in greater numbers and at a faster rate.

Since education is basic for training scientific and technical personnel, conscientious efforts must be made to run universities and colleges, middle schools and primary schools well and the key colleges and schools must be run successfully. It is necessary to modernize the means of education step by step, develop television and radio courses and increase and improve the equipment of school laboratories. We should make a success of communist labor universities, "July 21" workers' colleges and "May 7" colleges and take active steps to set up television and correspondent universities and night schools. Institutions of higher education can apply tentatively the systems of enrolling day students and auditors and the credit system. In a word, diverse forms and ways must be employed to expand student enrollment. Graduates from all types of schools who have passed examinations and proved themselves qualified college graduates by state standards should be issued diplomas and assigned to jobs where they can put what they have learned to good use.

Great efforts must be made to strengthen postgraduate training. The Chinese Academy of Sciences and institutions of higher learning should take steps to increase postgraduate enrollment, and all production departments and local research institutions that have the required facilities should do the same, so that a large group of fairly well-equipped research workers who can work independently is trained in a relatively short time.

We should open all avenues to able people, making selections not only through student enrollment in institutions of higher learning and enrollment of postgraduates but also from among young people who participate in scientific contests, readers of scientific journals, people recommended by various departments and inventors and innovators on the industrial and agricultural fronts.

We must not overstress qualifications in selecting able people. Outstanding students can graduate from school ahead of time. Key colleges and universities can break with conventional practices and enroll exceptionally outstanding young people at any time. Self-taught students who have attained the level of college graduates or complete postgraduate courses can apply for permission to take the appropriate examinations. In a word, our system must be suited and conducive to the development of our scientific and technological undertakings and to the growth of our scientific and technological forces.

We must take resolute steps to transfer to scientific and technical posts those competent and well-trained scientific and technical workers whose specialities are not being put to use. Retired scientists and technical experts who can still work should be allowed to resume work if they apply to do so. Appropriate steps should be taken to assign jobs to those scientists and technicians who for various reasons have not been given work despite their specialized knowledge.

(3) Institute Regulations for Training, Testing, Promoting and Rewarding Scientific and Technical Personnel

The fundamental task of scientific research institutions is to produce research results and able people.

We already have a working class contingent of scientific and technical personnel who are both Red and expert, which provides the basis for accelerating the development of science and technology in China. But this contingent is not yet large in number nor high in level, and painstaking efforts must be made to increase the numbers and raise the level.

We must exert greater efforts to revolutionize our scientific and technical personnel and encourage them to make a diligent study of Marxism-Leninism-Mao Tsetung Thought, constantly raise their political consciousness and remould their world outlook in the three great revolutionary movements, so as to make steady progress along the road of becoming both Red and expert.

It is highly important to train a core force of scientific workers and top-notch scientists. It is not at all a proletarian policy to disregard priorities and forbid people to become top-notch. Scientific and technical personnel who have attained the level of assistant research fellow, lecturer and engineer or higher should be given a certain period of time for advanced study every two or three years. Plans should be worked out to select and send scientific and technical personnel abroad for advanced study or for short-term work. Various measures should be taken to help scientific and technical workers in general study basic theory and acquire specialized knowledge so as to raise their professional level all the time.

It is necessary to correct such wrong ideas as: It makes no difference whether you work or not, whether you do a good job or a poor one, and whether you do more work or less. We must firmly establish the moral code under which it is correct to work hard to improve professional competence in the service of revolution, it is praiseworthy to produce good results in scientific research for the socialist motherland and it is an honour to make advances in science and technology in order to achieve the four modernizations. Technical titles should be restored, the system of individual responsibility established for all technical posts, and the testing and promotion of scientific and technical personnel undertaken at regular intervals, in general every two or three years. Those who prove to be exceptionally outstanding can have their records examined promptly and be promoted more than one grade at a time. Those who prove unequal to scientific research after a period of training and testing should be transferred to jobs more suited to their capabilities.

Scientific and technical personnel who have made important contributions to the country should be rewarded in various ways. Moral encouragement should be the main form, but there should also be proper material rewards.

(4) Uphold the Policy of Letting a Hundred Schools of Thought Contend

"Let a hundred schools of thought contend" is the correct policy Chairman Mao formulated for developing China's socialist cause of science. Free contention among different schools should be encouraged and fostered in science. Imposing one particular school and banning another by administrative fiat can only hamper the development of science. Truth develops through contention. "Only in an atmosphere of democracy can large numbers of able people be brought forward." With regard to academic problems, we should have both freedom for criticism and freedom for refuting criticism; we should foster the attitude of upholding truth and correcting mistakes and strictly prohibit the practice of affixing political labels indiscriminately. Scientific papers and reports must not be withheld from publication, unless they divulge state secrets or involve charlatanry. Those scientific and technical personnel who have aired erroneous views on academic questions should not be discriminated against, but should be helped so that they will work better.

The National Scientific and Technical Association and the societies of natural sciences should broaden their academic activities. Scientific research institutions, universities and colleges and all scientific and technical organizations should make it a regular practice to carry out academic activities.

We should encourage and help scientific and technical personnel to study Marxist philosophy. Lenin pointed out: "For natural science is progressing so fast and is undergoing such a profound revolutionary upheaval in all spheres that it cannot possibly dispense with philosophical deductions." It is necessary to hold different kinds of forums regularly, begin publishing journals on dialectics of nature, carry out research on the history of natural science, and encourage scientific and technical personnel to guide their scientific research with Marxist philosophical concepts.

Guiding scientific research with Marxist philosophy in no way means substituting philosophical deductions for concrete, painstaking scientific research. In evaluating scientists, ancient or contemporary, Chinese or foreign, we should avoid negating their achievements in science and technology because of their reactionary political attitudes or idealistic world outlook, or rejecting their correct aspects because of their errors on certain questions.

(5) Learn Advanced Science and Technology From Other Countries and Increase International Academic Exchanges

Science and technology are the common treasure of mankind. All countries and nations have their own merits and characteristics, and exchanges can help them assimilate each other's strong points and blaze new trails. An important way to develop science and technology at high speed is to utilize fully the latest achievements in the world in science and technology and absorb their quintessence.

We should introduce selected advanced technologies that play a key and pace-setting role in line with the needs for modernizing our country. We should take effective steps to master the technologies introduced. Special teams should be organized to learn and study major scientific and technological projects and complete sets of equipment that have been introduced. We should know the how, and endeavour to know the why of the technologies introduced so as to create our own. We should study earnestly and conscientiously, and grasp and understand the subject matter before trying to improve on it. We must not lightly criticize and discard anything before we know it inside out.

We must strengthen scientific and technical cooperation and academic exchanges with other countries and keep abreast of the results, trends, policies and measures of their scientific and technological research as well as their experience in organization and management. We should actively and systematically enlarge the scope of sending scientific and technical personnel, students and postgraduates abroad to study, receive advanced training, make study tours and take part in international academic conferences and other academic activities. At the same time, we will also invite foreign scientists, engineering and technical experts to China to give lectures, serve as advisors or join us in scientific research.

(6) Ensure Adequate Work Hours
for Scientific Research

Catching up with scientifically and technologically advanced countries means that we must narrow our time-gap with them. High speed means doing more work in less time. In this sense, time is the crucial factor, and we must seize the day and even the minute and the second. Mental labor is also a kind of labor and a very hard one at that. Just as we must ensure full work hours for workers and peasants, so we must make sure that scientific research workers can devote at least five-sixths of their time each week to professional work. We must exercise strict control over the practice of assigning scientific research institutions tasks that are irrelevant to scientific research.

Scientific research workers should be encouraged to study and improve their professional competence in their spare time, when they should be left free except for attending party and Youth League meetings or other major political activities.

A special effort should be made to study and solve the problem of ensuring an adequate number of work hours for the core research workers. They should be provided with assistants and their administrative duties cut down.

Guaranteeing adequate work hours for scientific research is an important political task for all scientific research institutions. Our party has a fine tradition and rich experience in political work. Since the founding of our People's Republic, the political workers on the scientific and technological front have conscientiously implemented the party's policies, untiringly carried out propaganda and organizational work among the masses and made great efforts to develop science and technology and build up a scientific and technical force. However, our political work was seriously disrupted as a result of sabotage by the "gang of four". We must make a clean sweep of the gang's pernicious influence, carry forward our party's fine style--integrating theory with practice, forging close links with the masses and practicing self-criticism--and carry out lively political work. We must do away with formalism and strive to achieve practical results in all our work.

Supply services in scientific research institutions must serve scientific research, serving the frontline in the battle of scientific research and improving the living as well as working conditions for scientific and technical workers. Our supply workers are dedicated to their job, defying hardship and fatigue and ignoring cold and heat. Their work goes into every achievement in science and technology. A close relationship of unity and cooperation, mutual help, mutual understanding and mutual encouragement should be established between the scientific and technical personnel and the supply workers. It is essential to create favorable conditions for work and study so that scientific and technical personnel can devote themselves entirely to the advancement of scientific research. Steps should be taken to improve canteens, nurseries and other collective welfare facilities and the supply of equipment and materials. Our country is not yet rich enough and cannot possibly solve all the problems of material conditions at once. We can make improvements only gradually, while giving priority to certain important problems. At present, we should first of all improve the working and living conditions of scientific and technical workers who have made outstanding achievements.

(8) Close Cooperation With an Appropriate Division of Labour

The Chinese Academy of Sciences is the overall centre for research in natural science throughout the country. Its main task is to study and develop new theories and techniques and to solve major scientific and technical problems involving many fields of economic construction, in cooperation with the departments concerned. It should lay stress on basic theoretical research and aim at raising standards. The institutions of higher learning serve as both educational and research centres; they are an important force in scientific research, covering both the basic and the applied sciences. Research institutions of the various departments and localities should devote themselves mainly to the applied sciences, but they should also undertake appropriate research in basic science. The above institutions and the non-professionals engaged in scientific experiment should work in close cooperation with an appropriate division of labour.

We must develop the attitude of subordinating ourselves to the national interest. We must, first of all, ensure the fulfillment of the tasks assigned by the state and key projects, for this is where the overall interest lies. We must avoid diffusing our efforts and guard against the attitude of each going his own way. If every project claims priority, none can make a real advance, and this will be detrimental to the overall interest. It is imperative to give scope to the initiative of both the central and local authorities. Scientific research must be integrated with production and with application. All departments, regions and organizations should display a communist spirit of cooperation and should regard the attitude towards cooperation as a question of world outlook.

(9) Speed Up Popularization and Application of Scientific and Technical Achievements and New Technologies

It is a growing trend that raising labour productivity depends on the application of new technologies. We must take effective steps to change the present situation in which the popularization and application of a large number of scientific and technological achievements have long been delayed. We must first of all overcome the conservative idea among some of our comrades of being content with things as they are, make greater efforts to publicize scientific and technological achievements and new techniques, seriously study and solve the problems that exist in the exchange and popularization of these achievements and change irrational regulations on keeping secrets.

Close attention should be paid to the intermediate links between scientific research and industrial and agricultural production and essential pilot factories and workshops to trial-produce new products should be built or improved.

We should study and formulate appropriate technical and economic policies and encourage the application of scientific and technological achievements. The standards by which production departments are examined should include the application of such achievements and the innovations made in technology. We should actively support their efforts to apply new techniques and improve work processes by providing them with the necessary materials and funds.

(10) Make Painstaking Efforts To Popularize Science

We must arm our cadres and the masses with modern scientific and technical knowledge.

We should organize popular science groups which combine the efforts of both professionals and the masses, expand the publication of popular science readers and the production of science and education films, run successfully halls of science and technology, museums,

(7) Strive to Modernize Laboratory Facilities and Information and Library Work

Modern natural science came into being only after the emergence of experimental science. Many important scientific results have been attained primarily because of the availability of new laboratory facilities. Up-to-date laboratory facilities are an important feature of modern science and technology.

In the next eight years we should build a number of modern experimental installations and centres. We should give a high priority to refitting the existing laboratories so as to modernize them as quickly as possible.

Emergency measures must be taken to push forward the designing and production of instruments and equipment. Efforts must be made to expand, renovate and build a number of factories specializing in scientific instruments and chemical reagents. Scientific research institutions, universities and colleges should pay great attention to new principles, new techniques and new products in their research on instruments and equipment and where necessary expand the capacity for processing, trial-manufacturing and production.

It is essential to strengthen the management of the designing, production, distribution and use of scientific instruments and bring them under an overall national plan. Costly large precision instruments should be used jointly by the units requiring them so that they are fully utilized. All large modern experimental centres should be open to scientific and technical personnel from organizations related to them and teachers and students from universities and colleges who come to conduct experiments and research so that these centres will gradually become research complexes.

With the development of science and technology, the number of scientific papers and data is increasing tremendously. Several million scientific papers are published in the world every year. If we should fail to keep abreast of the developments, trends and levels of achievement in science and technology the world over, and waste our valuable man and material power in following the beaten track and making detours that others have made, it would be out of the question for us to reach catch up with and surpass advanced world levels in science and technology.

We should improve and strengthen our scientific and technical information institutions, and take effective steps to form scientific and technical information networks, each covering a region or a trade. We should collect foreign scientific and technical information and data extensively through diverse channels. We should register and organize exchanges of the research topics and scientific and technical results of our research institutions. Departments of scientific and technical administration, scientific and technical information institutions and all scientific research organizations must improve their analysis and study of information.

It is essential to modernize scientific and technical information work and equip information institutions with modern facilities in the shortest possible time. In the next eight years we will set up a number of documentation retrieval centres and data bases and build a preliminary nation-wide computer network of scientific and technical information and documentation retrieval centres. We should also strengthen the publication of scientific and technological material.

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exhibition centres, technique-exchanging teams and various kinds of scientific and technical clubs. The press, radio and television should devote more space and time to the dissemination of science and technology. Public establishments should gradually extend their programmes to include popular science activities. Where conditions permit, big and medium-sized cities should expand or build halls of science and technology and museums of natural history.

Special efforts should be made to interest our cadres at various levels in science and technology. Arrangements should be made for scientific and technical workers and teachers to acquaint cadres with the latest trends, basic knowledge and current research results in China and the rest of the world.

In popularizing science, we must give full scope to the active role of educated young people settled in the countryside.

All sectors must pool their efforts to foster among the cadres, the masses and the young people the habit of living, studying and applying science.

Comrades, we have undertaken a task of historic significance. We have a glorious task and a hard job. Under the wise leadership of the party Central Committee headed by Chairman Hua, our advance towards the modernization of science and technology is gaining momentum. We are sure to reach the magnificent goal of the four modernizations!

DELEGATES CONTINUE SPEECHES AT NATIONAL SCIENCE CONFERENCE

28 March Session

OW2811134Y Peking Domestic Service in Mandarin 1000 GMT 28 Mar 78 OW

[Text] The plenum of the National Science Conference continued to meet this afternoon at the Great Hall of the People. Four delegates spoke at the session.

The session was presided over by Chen Yung-kuei, member of the Political Bureau of the CCP Central Committee and vice premier of the State Council. Present were party and state leaders, including Fang I, Chi Teng-kuei, Wu Te, Chen Hsi-lien, Chen Mu-hua, Wang Chen and Ku Mu as well as Su Yu, responsible person of the Military Commission of the CCP Central Committee.

At today's session, Chia Cheng-jang, member of the party branch committee of the Tachai production brigade, made a speech entitled "Do Farm Work in a Scientific Way For the Sake of the Revolution."

Vice Minister of Metallurgical Industry Yeh Chih-chiang made a speech entitled "March Toward the Modernization of Metallurgical Science and Technology and Promote the Fastest Possible Development of the Metallurgical Industry."

(Chen Chih), engineer and director of the Physics Department of the Iron and Steel Research Institute under the Ministry of Metallurgical Industry, made a speech entitled "Devote Ourselves to the Development of Science in Our Country."

Vice Minister of Agriculture and Forestry Ho Kang made a speech entitled "Deepen the Movement for Agricultural Scientific Experimentation and Strive To Develop Modern Socialist Agriculture."

Their speeches received a warm welcome from those present.

Hunan CCP Secretary Liu Fu-cheng

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[Excerpts of speech by Liu Fu-sheng, secretary of the Hunan Provincial CCP Committee, at 27 March session of the National Science Conference: "Chairman Hua Leads Us in Conducting Scientific Experiment on a Large Scale"]

[Excerpts] Peking, 27 Mar--While working in Hunan, Chairman Hua persisted in grasping the three great revolutionary movements simultaneously, attached great importance to scientific experiment, and periodically listened to reports on scientific and technical work. He visited industrial and agricultural production fronts and scientific research worksites in the province to conduct investigations, assess the progress of scientific and technical work and point out the main directions of this work. He vigorously supported scientific experiments and enthusiastically urged all trades and professions to implement technical innovation and technical revolution on a large scale.

Under the direct leadership of Comrade Hua Kuo-feng, the Hunan Provincial Revolutionary Committee held provincial meetings in 1969 to exchange experience in industrial technical innovation and technical revolution and in agricultural scientific experimentation. On Comrade Hua Kuo-feng's proposal, the Hunan Provincial Revolutionary Committee decided that a provincial meeting to exchange experience in agricultural scientific experiments be held annually.

In his report to the second provincial meeting to exchange experience in agricultural scientific experiments in June 1970, Comrade Hua Kuo-feng pointed out in explicit terms that in no way should the work of farming for the sake of revolution be set at odds with scientific farming and that the revolutionary committees at various levels should conscientiously promote scientific farming so that our agricultural science and technology can better serve agricultural production.

In the middle of the 1960's a study of hybrid rice heterosis was initiated by Yuan Lung-ping, a teacher at the Chienyang Agricultural School, his student Li Pi-hu, and other comrades after they had succeeded in using cross breeding to achieve bumper harvests of maize and sorghum. Comrade Hua Kuo-feng was informed of this study and was greatly concerned about its progress. Yuan Lung-ping attended the 1970 provincial meeting to exchange experience in agricultural scientific experiments, bringing with him the initial results of his study. Comrade Hua Kuo-feng scanned the charts and photographs showing the results of the hybrid rice study program, conferred a citation on Yuan Lung-ping's study group, and instructed that this study program be carried out among the masses so that the technical difficulties involved could be solved as quickly as possible.

At the 1972 National Forum on Agricultural and Forestry Science and Technology, Comrade Hua Kuo-feng issued another instruction to the effect that the hybrid rice study be listed as one of the country's key scientific research programs and be conducted through a nationwide cooperative effort to be organized by the Chinese Academy of Agricultural and Forestry Science and the Hunan Academy of Agricultural Sciences. Under the close attention of Chairman Hua and the party Central Committee, this scientific research program has scored remarkable achievements. The acreage of hybrid paddy rice planted in Hunan in 1977 stood at 18 million mou, and high yields were achieved. Per-mou yield of intermediate rice averaged more than 700 catties and that of late rice over 500 catties. This was an increase of more than 30 percent over the per-mou yield of regular rice.

It is necessary to clearly assign the top two persons of leading bodies. These positions must be filled by cadres with a strong party spirit and enthusiasm for work, a fine work style and high proficiency in work. In resolutely implementing the party's policy on cadres, it is imperative to assign important jobs to cadres who have been able to stand the test in the protracted revolutionary struggle, particularly to those who made contributions in the 11th struggle between the two lines and were attacked and persecuted by the "gang of four." Leading bodies should unite as one, dare to tackle problems and contradictions with determination, and courageously lead and organize the masses in pushing the work forward. After consolidation, leading bodies must achieve a certain stability so as to help cadres accumulate experience and raise the standard of leadership.

Acting on the behests of Chairman Mao and Premier Chou, Chairman Hua put forward in his report on the work of the government delivered at the Fifth NPC the gigantic tasks of accomplishing the four modernizations before the end of this century and making our national economy take its place in the front ranks of the world. Chairman Hua pointed out: "The 10 years from 1976 to 1985 are crucial for accomplishing these gigantic tasks." Seizing the day and seizing the hour, we must adopt effective measures to speed up consolidation on all fronts and thoroughly check all our work. If consolidation is carried out successfully, it will provide us with a firm foundation for our new Long March. Under the leadership of the party Central Committee headed by Chairman Hua, we will definitely realize our goal to achieve great success in grasping the key link and running the country well within 3 years and to accomplish the 10-year plan for the development of the national economy as well as the gigantic tasks of accomplishing the four modernizations before the end of this century.

CONTINUED REPORTAGE ON NATIONAL SCIENCE CONFERENCE

Text of Teng Speech

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[Text] Peking, 21 Mar (HSINHUA)--Following is the full text of the speech given by Teng Hsiao-ping, vice-chairman of the Central Committee of the Communist Party of China and vice-premier of the State Council, at the opening ceremony of the National Science Conference on March 18:

Comrades! The successful convocation of the National Science Conference is a matter of great joy for us and for the people throughout the country. The very fact that today we are holding this grand gathering unparalleled in the history of science in China clearly indicates that the days are gone forever when the gang of Wang Hung-wen, Chang Chun-chiao, Chiang Ching and Yao Wen-yuan could willfully sabotage the cause of science and persecute the intellectuals. Never before has work in science and technology received such attention and concern from the whole party and the whole people. Vast numbers of scientists and technicians, the workers, the peasants and the armymen are actively participating in the movement for scientific experiment. Enthusiasm for science and its study is becoming popular among the young people. The entire nation is embarking with tremendous enthusiasm on the march towards the modernization of science and technology. Splendid prospects lie before us.

Among those attending the present conference are outstanding scientists and technicians from various fronts, first-rate technical innovators, model labourers who excel in scientific farming and cadres devoted to the party's scientific undertakings.

You have worked diligently for the progress of science and technology in our socialist motherland and made outstanding contributions. On behalf of the Central Committee of the Communist Party of China, I thank you and pay you tribute.

Comrades, our people face the great historic mission of comprehensively modernizing agriculture, industry, national defence and science and technology this century, making our country a modern, powerful socialist state. We have waged a sharp and bitter struggle against the "gang of four" on whether or not to accomplish the four modernizations. The "gang of four" made the absurd claim that "if the four modernizations are carried through, capitalist restoration will happen on the same day." Their wild sabotage brought our national economy for a time to the brink of collapse and was increasingly widening our distance from advanced world scientific and technological standards. Were they really opposed to the restoration of capitalism? Not at all. On the contrary, wherever their influence was most rampant, signs of capitalist restoration were most widespread. What they did serves as a negative example, making us appreciate more deeply that under conditions of proletarian dictatorship, if we do not modernize our country, raise our scientific and technological level, develop the social productive forces, strengthen our country and improve the material and cultural life of the people, our socialist political and economic system cannot be fully consolidated and there will be no sure guarantee for our country's security. We adhere to the party's basic line formulated by Chairman Mao, and the more up-to-date our agriculture, industry, national defence and science and technology, the greater our strength in the struggle against capitalism and all forces of restoration, and the more our people will support the socialist system. Only by making our country a modern, powerful socialist state can we more effectively prevent capitalist restoration, cope with aggression and subversion by social-imperialism and imperialism and be more certain of gradually creating the material conditions for the advance to the great ideal of communism.

The crux of the four modernizations is the mastery of modern science and technology. Without modern science and technology, it is impossible to build modern agriculture, modern industry or modern national defence. Without a high-speed development of science and technology, it is impossible to develop the national economy at high speed. On the proposal of Chairman Hua, the Central Committee of the party has decided to call this National Science Conference to bring home to the whole party and the whole country the importance of science, map out a programme, commend the advanced units and individuals and discuss measures for speeding up the development of science and technology. Today, I am going to give some opinions on pertinent questions.

The first question--the question of understanding that science is part of the productive forces. On this point, the "gang of four" raised a hue and cry confounding right and wrong and causing much confusion. Marxism has consistently held that science and technology are part of the productive forces. More than a century ago, Marx said: Wider use of machines in production calls for a conscious application of natural science. He also pointed out: "Science too (is) among these productive forces." The development of modern science and technology has bound science and production ever more tightly together. Science and technology as productive forces are manifesting their tremendous role ever more obviously.

Modern science and technology are undergoing a great revolution. The last three decades have not just seen advances in some aspects of scientific theory and production techniques, nor has this period been merely the general run of progress and reform. No, there have been profound changes and new leaps in almost all areas of science and technology. A whole series of new, rising sciences and technologies have emerged and are still doing so. Modern science has opened the way for the progress of production techniques and determined the direction of their development. Many new instruments of production and technological processes have come into being first in the laboratory. A series of new-born industries, including high polymer synthesis, atomic energy, electronic computers, semi-conductors, astronautics and laser, have been founded on the basis of newly-emerged science and technology. Of course there are now and there will be many theoretical research topics with no practical application in plain sight for the time being. But a host of historical facts have proved that once a major breakthrough is scored in theoretical research, it means tremendous progress for production and technology sooner or later. Contemporary natural science is being applied to production on an unprecedented scale and at a higher speed than ever before. This has given all fields of material production an entirely new look. In particular, the development of electronic computers, cybernetics and automation technology is rapidly raising the degree of automation in production. With the same amount of manpower and in the same number of work hours, people can turn out scores or hundreds of times more products than before. How have the social productive forces made such tremendous advances and how has labour productivity increased by such a big margin? Mainly through the power of science, the power of technology.

Everyone knows that the basic factors in the productive forces are the means of production and manpower. What is the relationship of science and technology to the means of production and to manpower? Throughout history, the means of production have always been linked with science and technology of one kind or another, and likewise, manpower has always meant manpower armed with a certain knowledge of science and technology. We often say that man is the most active factor among the productive forces. "Man" here refers to people who possess a certain scientific knowledge, experience in production and skills in the use of tools to produce material wealth. There were great differences in the instruments of production man used, his mastery of scientific knowledge, and his productive experiences and skills in the stone, bronze and iron ages and in the 17th, the 18th and the 19th centuries. Today, the rapid progress of modern science and technology is accelerating the renewal of production equipment and the changes in technological processes. Many products are superseded by a new generation of products in a matter of a few years. Only by acquiring a higher level of scientific and general knowledge, rich experience in production and advanced skills, can a worker play a bigger role in modern production. In our society, the labourers, who have a high degree of political awareness, study consciously and assiduously to raise their scientific and cultural level and thus will surely be able to achieve a higher rate of productivity than that attained under capitalism.

The recognition that science and technology are productive forces brings the following question in its train: How should we regard the mental labour involved in scientific pursuits? Since science is becoming an increasingly important part of the productive forces, are people engaged in scientific and technological work to be considered workers or not?

There are various kinds of brain workers in societies under the rule of exploiting classes. Some are entirely in the service of the reactionary ruling classes and have thus set themselves against workers engaged in manual labour. But even in those cases, as Lenin said, there are many intellectuals engaged in scientific and technical work who themselves are not capitalists but scholars, although they are permeated with bourgeois prejudice. The fruits of their work are used by the exploiters, but, generally speaking, this is determined by the social system, and not by their own free choice. They are entirely different from politicians who rack their brains to advise the reactionary ruling classes directly. Marx pointed out that ordinary engineers and technicians join in the creation of surplus value. That is to say, they, too, are exploited by the capitalists.

In a socialist society, brain workers trained by the proletariat itself differ from intellectuals in any exploiting society in history. In the course of socialist transformation in China, Chairman Mao pointed out that intellectuals from the old society faced the question of what kind of "skin" they attached themselves to. Class contradictions and class struggle exist throughout the historical period of socialism, and the intellectuals face throughout the need to solve the question of what kind of "skin" to attach to and whether to keep to the proletarian stand. But, generally speaking, the overwhelming majority of them are part of the proletariat. The differences between them and the manual workers lies only in a different role in the social division of labour. Those who labour, whether by hand or by brain, are all working people in a socialist society. With the advancement of modern science and technology and progress towards the four modernizations, a great deal of heavy manual work will gradually be replaced by machines. Manual labour will steadily decrease for workers directly engaged in production and mental work will increase. Moreover, there will be an increasing demand for more people in scientific research and for a larger force of scientists and technicians. The "gang of four" distorted the division of labour between mental and manual work in our socialist society today, calling it class antagonism. Their aim was to attack and persecute the intellectuals, undermine the alliance of the workers, the peasants and the intellectuals, disrupt the social productive forces and sabotage our socialist revolution and construction.

Correctly understanding that science and technology belong to the productive forces and that brain workers who serve socialism are a part of the working people has a close bearing on the rapid development of our scientific undertakings. Since we accept these two premises, we must naturally put great effort into developing scientific research and science education and give full play to the revolutionary intiative of the scientific and technical workers and the educational workers, in order to accomplish the four modernizations in the short space of twenty-odd years and bring about a tremendous growth of our productive forces.

Our science and technology have progressed enormously since the founding of new China and played an important role in economic construction and national defence construction. In old China, this would have been unthinkable. There is no way for anyone to deny this great achievement.

But we must see, with a clear head, that there is still a very big gap between our science and technology and advanced world levels and that our scientific and technical forces are still very weak, far from meeting the needs of modernization. We have lost a lot of time, in particular, as a result of sabotage by Lin Piao and the "gang of four".

How do things stand with the technical level of our production? Several hundred million people are busy producing food. We still have not really solved the grain problem. Average annual output of grain per farm worker is about 1,000 kilogrammes in China, whereas in the United States the figure is over 50,000 kilogrammes, a disparity of several dozen times. Labour productivity in our iron and steel industry, too, is only a small percentage of advanced levels abroad. The gap in the newly-emerged industries is still wider. A lag in this field of only eight to ten years, or even three to five years, makes a big gap, let alone a lag of ten to twenty years.

Chairman Mao often reminded us: "China ought to make a greater contribution to humanity." In ancient times, China had brilliant achievements in science and technology: Its four great inventions played a significant role in the advance of world culture. But our ancestors' achievements can serve only to confirm our confidence in overtaking and surpassing advanced world levels and not to console us on our backwardness today. Our contributions in science and technology at present are highly incommensurate with the position of a socialist country like ours.

Will factually pointing out this backwardness make people lose heart? There might be such people. They do not have half a whiff of Marxism about them. As for us proletarian revolutionaries, by stating the facts and making a serious analysis of the historical and the present causes of this situation, we can accurately draft our strategic plan, deploy our forces and strive for a rapid change in the situation. Only in this way, moreover, can we activate people to study modestly and speedily master the world's latest science and technology.

Backwardness must be perceived before it can be changed. A person must learn from the advanced before he can catch up and surpass them. Of course, to raise China's scientific and technological level we must rely on our own efforts, develop our own inventions, and adhere to the policy of independence and self-reliance. But independence does not mean shutting the door on the world, nor does self-reliance mean blind opposition to everything foreign. Science and technology are a kind of wealth created in common by all mankind. Any nation or country must learn from the strong points of other nations and countries, from their advanced science and technology. It is not just today, when we are scientifically and technically backward, that we need to learn from other countries; after we catch up with the advanced world levels in science and technology, we will still have to learn from the strong points of others.

China's revolution has attracted all the world's revolutionary people who live and breathe with it. Our socialist modernization has won their interest and support and will do so on a widening scale. We must actively develop international academic exchanges and step up our friendly contacts with scientific circles of other countries. We express heartfelt thanks to all our friends abroad who have helped us in science and technology.

That is the first question on which I want to speak.

The second question concerns the building of a mammoth force of scientific and technical personnel who are both Red and expert.

For the modernization of science and technology, we must have a mighty scientific and technical force of the working class which is both Red and expert, and a large number of scientists and experts in engineering and technology who are first rate by world standards. We have a heavy task before us to build such a force.

An important question here is that we must have a correct understanding of being both Red and expert, and set reasonable standards for it.

The "gang of four" made the absurd statement, "the more knowledgeable, the more reactionary." They said they "preferred labourers with no culture" and they boosted as a "model of being Red and expert" an ignorant counter-revolutionary clown who handed in a blank examination paper. On the other hand, they vilified as being "White and expert" good comrades who studied diligently and contributed to the motherland's cause of science and technology. This reversal of right and wrong and of ourselves and the enemy seriously muddled people's minds for a time.

Chairman Mao advocated intellectuals becoming both Red and expert, encouraging everyone to remould the bourgeois world outlook and acquire the proletarian world outlook. The basic question about the world outlook is whom to serve. If a person loves our socialist motherland and is serving socialism and the workers, peasants and soldiers of his own free will and accord, it should be said that he has initially acquired a proletarian world outlook and, in terms of political standards, cannot be considered White but should be called Red. Our scientific undertakings are an important part of our socialist cause. To devote oneself to our socialist science and contribute to it is an important manifestation of being Red, the integration of being Red with being expert.

Imbued with Mao Tsetung Thought, our scientists and technicians have made truly rapid progress in the last twenty-eight years. The overwhelming majority of them love the party and love socialism, strive to integrate themselves with the workers, peasants and soldiers, work wholeheartedly and fruitfully at their posts. Their faith in the party and in socialism never wavered, no matter how Lin Piao and the "gang of four" persecuted and tormented intellectuals; they kept working on science and technology under extremely difficult conditions. Many showed a high level of political awareness in the eleventh struggle between the two lines. The smashing of the gang unleashed in them great revolutionary enthusiasm. They wholeheartedly support the party Central Committee headed by Chairman Hua and work still harder for the four modernizations. How invaluable are these scientists and technicians: They are worthy of the title "Red and expert," fit to be called our working class's own scientific and technical force. Chairman Hua once stressed with great satisfaction that such a force is an important factor in our confidence that we will catch up and surpass advanced world standards. This is a realistic, scientific appraisal.

This appraisal naturally does not mean that these scientists and technicians all have a very high level of political and ideological consciousness or that there are no shortcomings and mistakes of one kind or another in their ideology, their work style or their specific work.

It means that judged by the basic criterion of political stand, the overwhelming majority of them take the stand of the working class, and these revolutionary intellectuals constitute a force our party can rely on. They should not be complacent or come to a halt, but should continue the effort, constantly seeking new progress both politically and in their specific fields. Their shortcomings and mistakes are a matter for education and assistance, something to be overcome through criticism and self-criticism. No one is free from shortcomings and mistakes. Take people like us, our cadres doing political work and our veteran cadres who have been in the party for decades: Do we not also have shortcomings or errors of this kind or that? Why be especially exacting towards vocational cadres and technical experts! As for scientists and technicians with undesirable family backgrounds or who committed mistakes in the past or whose families and social contacts present problems, we should judge them mainly by their own basic political attitude, by the way they acquit themselves and by their contributions to socialist revolution and construction.

There is a section of scientists and technicians whose bourgeois world outlook has not fundamentally changed, or who are rather deeply influenced by bourgeois ideology. They often waver in the midst of sharp, fierce and complicated class struggle. As long as they are not against the party and against socialism, we should, in line with the party's policy of uniting with, educating and remoulding the intellectuals, bring out their specialized abilities, respect their labour and take an interest in their progress, giving them a warm helping hand. Chairman Mao consistently held that the more people in our revolutionary ranks the better, that we should respect those who have knowledge and specialized skills or have made contributions, and that our attitude towards any person who has made mistakes should be first to observe and second to give help and not to look down on him. We must earnestly implement these teachings of Chairman Mao's.

In our socialist society, everyone should remould himself. Not only those who have not changed their basic stand should remould, but everybody should study and constantly remould himself, study new problems, absorb what is new and consciously guard against corrosion by bourgeois ideology, so as better to shoulder the glorious and arduous task of building a modern, powerful socialist country.

To catch up and surpass advanced world levels within the century means that we should cover the distance in the next 22 years that took others forty or fifty years or more. Scientists and technicians should concentrate their energy on scientific and technical work. When we say that at least five-sixths of their work time should be left free for their scientific and technical work, this is meant to be the minimum demand. It is still better if even more time is available for this purpose. If some persons work seven days and seven evenings on end to meet the needs of science or production, that shows their lofty spirit of selfless devotion to the cause of socialism. We should learn from them, commend them and encourage them. Innumerable facts prove that only he can mount the pinnacles of science who devotes himself heart and soul, constantly strives for perfection, fears neither hardship nor disappointment. We cannot demand that scientists and technicians, or at any rate, the overwhelming majority of them, study a lot of political and theoretical books, participate in numerous social activities and attend many meetings not related to their work. Lin Piao and the "gang of four" frequently attacked scientists and technicians, accusing them of "being divorced from politics" and labelling people "White and expert" when they studied diligently to improve their knowledge and skills.

They vilified scientists, professors and engineers distinguished for their contributions as bourgeois academic authorities and, all outstanding young and middle-aged scientists and technicians trained by our party and state as revisionist sprouts. We must thoroughly eliminate the pernicious influence of the gang and take up the important task of training in the shortest possible time a group of experts in science and technology who are first rate by world standards. In the early period of the war of resistance against Japan, Chairman Mao said that our party's fighting capacity would be much greater and our task of defeating Japanese imperialism would be more quickly accomplished if there were one or two hundred comrades with a grasp of Marxism-Leninism which was systematic and not fragmentary, genuine and not hollow. The revolutionary cause needs outstanding revolutionaries, and so does the scientific cause need outstanding scientists. Working-class persons with outstanding talent come from the people and serve the people. Only an extensive mass base can provide a continuous flow of talent, and outstanding talents will, in turn, help raise China's scientific and cultural standards as a whole.

The discovery or training of talented people by our scientists and teachers is in itself an achievement and a contribution to the state. The history of science shows what great results can be produced in the field of science from the discovery of a genuinely talented person! Some of the world's scientists have looked upon their discovery and training of new talent as the greatest achievement of a lifetime. There is much to be said for this view. A number of outstanding mathematicians in China today were discovered in their youth by older generation mathematicians who helped them mature. Some of the newcomers may have surpassed their teachers in scientific achievement, but the teachers' contributions are indelible, nonetheless.

The third question I want to discuss is how to make the system of division of responsibilities under the leadership of party committees work in scientific and technical departments.

Rapid development of science and technology hinges on good party leadership in these fields.

Our country has entered a new period of development in socialist revolution and construction. According to the constitution adopted by the Fifth National People's Congress and Chairman Hua's report on the work of the government to the congress, the general task in this new period is: To steadfastly continue the revolution under the dictatorship of the proletariat, deepen the three great revolutionary movements of class struggle, the struggle for production and scientific experiment, and transform China into a great and powerful socialist country with modern agriculture, industry, national defence and science and technology by the end of the century. To accomplish this general task we must wage a great political and economic revolution and a great scientific and technical revolution. This is the new content for continuing the revolution under the dictatorship of the proletariat in the new period of development.

To meet the requirements of the new situation and the new task, there must be corresponding changes in the centre of gravity for party work and in the party's work style. During the unprecedented Great Proletarian Cultural Revolution, our party concentrated maximum efforts on the political revolution.

"White" is a political concept. Only political reactionaries who are against the party and against socialism can be called "White". How can you label as "White" a man who studies hard to improve his knowledge and skills? Scientists and technicians who have views of one kind or another in their ideology or their style of work should not be called "White", if they are not against the party and against socialism. How can our scientists and technicians be accused of being divorced from politics when they work diligently for socialist science? The cause of socialism calls for a division of labour. On condition that they keep to the socialist political stand, comrades of different trades and professions are not divorced from politics when they do their best at their posts; on the contrary, this is a concrete manifestation of their service to proletarian politics and of their socialist consciousness. A few years ago, Lin Piao and the "gang of four" made it quite difficult for the workers to do their jobs, for the peasants to till the land, for the armymen to do their military training, and for the students to study or scientists and technicians to do research in their work. What heavy losses this meant for our socialist cause! Was that not a profound lesson?

While striving to raise the level of our present scientific and technical force, and making full use of their abilities, we must also exert ourselves to train new personnel. Owing to sabotage by Lin Piao and the "gang of four", there is an age-gap in this force which makes the training of a younger generation of scientific and technical personnel all the more pressing.

We have a vast supply and a great potential in matters of selecting and training talented personnel. With the recent reform of the university enrollment system, we have discovered fine young people who are diligent, hard-working and talented. We are pleased to see their outstanding accomplishments. Though the "gang of four" ran wild for a time, they failed to dampen the enthusiasm of the youngsters for study, nor could they stifle the revolutionary zeal of the teachers to educate the next generation assiduously for the party and the people. Today the Central Committee of the party headed by Chairman Hua is paying close attention to science and education and laying strong emphasis on training and selecting talented people. We can foresee the dawn of a new era, with a multitude of outstanding people like the stars in the sky. The future of science lies with the youth. The growth of the younger generation is the hope of our flourishing cause.

Education is basic for training scientific and technical personnel. We must comprehensively and correctly carry out the party's policy on education, straighten out the orientation and make a good job to the educational revolution, to ensure a tremendous expansion and improvement. Education concerns not only the educational departments; party committees at all levels must attend to it earnestly as a major issue. People of all trades are gardeners tending the successors to the revolution. Their creative labour should be held in respect by the party and the people. Their teaching time must be guaranteed and care and attention must be given to their political life, working conditions and professional studies. Teachers with outstanding contributions in pedagogy should be commended and awarded.

On the question of talented people, we must particularly stress the need to break with convention in the discovery, selection and training of those with outstanding talent. This was one of the basic issues muddled by the "gang of four".

Today, after victory in the struggle to expose and criticize the "gang of four", while continuing to eliminate their pernicious influence and deepen the socialist revolution on the ideological and political fronts, the whole party must take firm hold of the work of modernization and carry out the great political and economic revolution and the great scientific and technical revolution, tasks which history has conferred on us.

The party committees at various levels should learn from Taching and Tachai and make an earnest effort to grasp simultaneously the three great revolutionary movements of class struggle, the struggle for production and scientific experiment. Following the examples of Taching and Tachai, they should unfold mass movements for scientific experiment, with new technical progress and new production records every year. There are several hundred thousand enterprises and several hundred thousand production brigades in our country. Extensive application of advanced science and technology to industry and agriculture and a greater, faster, better and more economical growth of production can come about only through large-scale technical transformation and scientific experiments in every enterprise and every production brigade. At the same time, we must work energetically for the success of specialized scientific research institutions. Professional scientists and technicians form the mainstay of the revolutionary movement for scientific experiment. Without a strong contingent of professional scientific researchers of high calibre, we could hardly scale the heights of modern science and technology and it would be difficult for the scientific experiment movement of the masses to advance wave upon wave in a sustained way. We must get the specialists integrated with the masses.

The Central Committee has stipulated that a system of individual responsibility for technical work be established in scientific research institutes and that the system of division of responsibilities among institute directors under the leadership of party committees be set up. These are important organizational measures which help strengthen the leading role of the party committees while bringing into full play the role of the specialists.

The basic task of scientific research institutes is to produce scientific results and train competent people. They must show more scientific and technical achievements of high quality and train scientific and technical personnel who are both Red and expert. The main criterion for judging the work of the party committee of a scientific research institute should be the successful fulfillment of this basic task. Only when this is well done has the party committee really done its duty to consolidate the dictatorship of the proletariat and build socialism. Otherwise, putting politics in command will remain mere empty talk.

A lot of work has to be done to fulfill this basic task. It is impossible for party committees to handle and solve all these matters. We must honestly admit that in scientific and technical work, there are many things we do not know. Even should we know them, it would still be impossible for party committees to do everything. There must be a division of responsibilities and a system of individual responsibility at each post from top to bottom. This is the only way to make our work orderly and efficient and bring about high-speed development; and this is the only way to define the duties incumbent on each post and to mete out the proper awards and penalties, at the same time obviating procrastination or evasions of responsibility and avoiding getting in each other's way.

The leadership given by party committees is primarily political leadership, that is, to ensure the correct political orientation and the implementation of the party's line, principles and policies and to bring out the initiative of all concerned.

At the same time, leadership is exercised through the plan. Good plans must be drawn up for scientific research, personnel must be carefully appraised and placed where they can do the best work, and all forces must be well organized. In order to follow out the plans and push forward our scientific research, it is also necessary to guarantee the supporting services and supplies and to provide the necessary working conditions for scientific and technical personnel. This is also part of the work of the party committees. I am willing to be the director of the Logistics Department at your service and to do this work well together with the leading comrades of party committees at various levels.

We should give the director and the deputy directors of research institutes a free hand in the work of science and technology according to their division of labour. Party committees should back up the work of all party and non-party experts in administrative positions and try to bring out all their capacities so that they really have powers and responsibilities commensurate with their positions. These experts are also cadres of the party and the state. We must never look askance at them. Party committees should not attempt to supplant them.

We must give full scope to democracy and follow the mass line, heeding opinions from scientific and technical personnel in such things as evaluating scientific papers, examining the competency of scientific and technical personnel, working out plans for scientific research and appraising research findings. As to divergent views on academic questions, we must follow the principle of letting a hundred schools of thought contend and encourage free discussion. We must listen closely to experts' opinions and enable them to play their full role so that we can do better at scientific and technical work and reduce our errors as much as possible. This is an important aspect of the mass line for party committees of scientific research institutes.

Do we mean to lighten the load of our political work or to lower its standards when we stress that scientific and technical personnel must concentrate on their specific work? No, we do not. This means a demand to raise the level of our political work, improve the method, do away with everything that smacks of formalism, eliminate the poisonous influence of the "gang of four" and conscientiously learn the fine traditions of Liberation Army political work. We must support whatever is conducive to the development of socialist science, and criticize and educate those who seek personal gain, hide their findings, refuse to work in coordination or even resort to monopoly and plagiarism and those who display other erroneous ideas and styles of work which are detrimental to the development of socialist science. As we are engaged in socialist modernization and are advancing towards the mastery of modern science and technology, the important task for our political work today is to make every scientist and technician understand how his work relates to the grand goal of the four modernizations, encourage and mobilize them to work together with one heart and coordinate their efforts in the spirit of revolution, so as to storm the citadels of science.

Although our party has accumulated some experience in leading scientific and technological work over the past twenty-odd years, we must admit that we confront a very large realm of necessity, an area we still do not know, with regard to how to effectively organize, manage and lead socialist science and technology. Until there is a change in this state of affairs, we can hardly have major achievements and the initiative will not be in our hands. Chairman Mao taught us time and again that persons in the dark cannot light the way for others. Leading party cadres at various levels must not be content to remain laymen. They must study their work and gradually learn the ropes.

We must apply ourselves to the study of Marxism and raise our political level and we must also strive to acquire scientific knowledge, sum up experience, both positive and negative, study and grasp the objective laws governing scientific and technological work and implement the party's principles and policies correctly and comprehensively. Our party was able to lead the people to the overthrow of the system of exploitation and to the transformation of society, and it will certainly be able to grasp the laws governing scientific and technological work and lead our people to the heights of world science.

The rights and wrongs in regard to political line have been basically clarified; we have mapped out a programme with the measures for its execution; the masses are already on the move. The task now confronting our party organizations at all levels is to inspire real drive in the masses, to find down-to-earth solutions to problems and to do good, solid work. In a word, we must put everything on a solid footing. We must stop all the manifestations of formalism, which go in for ostentation but disregard practical results, real efficiency, actual speed, quality or cost. Bad habits like empty talk, boasting and lying must be stamped out.

Comrades, the 11th party congress, the Fifth National People's Congress and the Fifth Chinese People's Political Consultative Conference, coming one after the other, fully demonstrated the great unity of our whole party and the great unity of the people throughout the country. This National Science Conference is likewise a gathering of unity. The unity of the party and the unity of the people--these are the basic guarantees for the sure triumph of our cause. Let us hold high the great red banner of Mao Tsetung Thought and, under the leadership of the party Central Committee headed by Chairman Hua, march forward unswerving and victorious, moving valiantly towards the grand goal of a modern, powerful socialist country!

May science in China flourish and grow! I wish the conference complete success!

Delegates Discuss Teng Speech

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[Text] Peking, 19 Mar--Group discussions were held on 19 March at the National Science Conference on Vice Chairman Teng's important speech and Vice Premier Fang I's report. The delegates chatted happily about participating in the conference and concentrated on discussing Vice Chairman Teng's important speech. They unanimously pledged to closely follow the party Central Committee headed by Chairman Hua and contribute all their wisdom and strength in the new Long March.

All delegates left the Great Hall of the People at dusk on 18 March highly excited after attending the opening ceremony of the National Science Conference. They chatted excitedly on their way back to and at the dormitories and many groups held discussion meetings that same evening.

At the conference there was joyous laughter, emotional tears and militant pledges that touched the hearts of each and every participant. When they ran out of words, they wrote poems to express their sentiments. Reflecting the common sentiments of the delegates was the following poem written by 70-year-old medical doctor Wu Cheng-chien: "The old horse has the will to gallop for 1,000 li, the new army is of one heart to catch up and surpass, this grand gathering of unprecedented scale generates warmth that inspires us to carry on the heritage for future generations."

The delegates held the unanimous view that this National Science Conference called by the CCP Central Committee is a grand gathering unparalleled in the history of China and a mobilization and oath-taking meeting for moving toward the modernization of science and technology. Chairman Hua, who personally put forth the proposal for holding this conference, presided over the opening ceremony, while Vice Chairman Teng made an important speech to us. Spring has returned for the scientific circles, and so have Chairman Mao's revolutionary line and policies. Contemplating the present and emotionally recalling the past, we can see how the "gang of four" ruined scientific and technical undertakings and persecuted and tormented scientists and technical workers; we can also see how much the party Central Committee cared for and attached importance to scientific work and trusted scientists and technical workers. Truly, two different lines represent two different worlds. We can never forget 18 March.

The delegates expressed their heartfelt support for Vice Chairman Teng's speech. In their discussions, the delegates held that Vice Chairman Teng's speech holds aloft the great banner of Chairman Mao and adheres to Marxism-Leninism-Mao Tsetung Thought. The speech has answered the key questions on the scientific and technological front that needed to be urgently solved. Hitting the nail right on the head, it has clarified the cardinal right and wrong confused by the "gang of four." The three questions touched on by Vice Chairman Teng are precisely those which we have been wanting to speak out about for years but did not dare to do so, nor could we present them clearly. From the standpoint of theory and the line, Vice Chairman Teng has made an incisive analysis and spoken our minds. His speech has liberated our minds and put us at ease. Physiologist Feng Te-pei said: We must use Vice Chairman Teng's speech as a weapon to criticize the "gang of four," eliminate their pernicious influence and do away with lingering fears; we must work courageously.

Many delegates emotionally declared: Vice Chairman Teng's speech has affirmed that those who labor mentally to serve socialism are a part of the working people and that the overwhelming majority of intellectuals are part of the working class. He also affirmed that they are a reliable force, thus comprehensively and accurately disseminating the great leader and teacher Chairman Mao's consistent thinking and expressing the trust and encouragement of Chairman Hua and the party Central Committee for scientific and technical workers. Many delegates said: We are doing what we should do, yet the party heaps high honors on us. On behalf of the party Central Committee headed by Chairman Hua, Vice Chairman Teng again expressed thanks and held us in high esteem. This has made us feel doubly close and caused our hearts to beat fiercely. Li Hua-chung, deputy secretary of the No 3 steel smelting plant of the Anshan Iron and Steel Company, said: I was a beggar in the old society. After liberation, the party sent me to college and later promoted me to deputy director of the plant. But I was branded by the "gang of four" as a "seedling of revisionism" and an "obstinate capitalist roader." Today, after hearing Vice Chairman Teng's speech, I deeply felt the party's warmth.

Professor Wang Jen-tung of Chekiang University said: We are truly grateful for the rational analysis made by Vice Chairman Teng in his speech on the intellectuals like us from the old society and for his proper assessment of our progress as well as our work. I am determined to always be a part of the proletariat and do my share in realizing the four modernizations. Chief geologist Min Yu of the Taching oilfield said: On the question of becoming Red and expert, the "gang of four" created tremendous confusion by branding whoever painstakingly studied techniques as "following the road to becoming specialists without a socialist consciousness."